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PRELIMINARY PROJECTIONS

Of

ECONOMIC ACTIVITY

In The

AGRICULTURAL, FORESTRY AND

RELATED ECONOMIC SECTORS

Of The

UNITED STATES

And Its

WATER RESOURCE REGIONS

1980, 2000 and 2020

U.S.D.A., NAL
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For Use Of The

Water Resources Council
And Cooperating Agencies
For

Comprehensive River Basin Planning

Prepared by

Economic Research Service
And Forest Service
U. S. Department of Agriculture
July 1967

FOREWORD

Materials contained in this report were prepared as a result of an agreement between the Interdepartmental Staff Committee of the ad hoc Water Resources Council, and the Office of Business Economics, U. S. Department of Commerce, and the Department of Agriculture dated March 6, 1964. This agreement arranged for a program of interregional analysis and projections of economic activity covering the United States and its major Water Resource Regions for use in river basin planning. Early in 1967 the Council of Representatives, Water Resources Council agreed to an extension of the original agreement. This change resulted in extending the agreement for approximately eighteen months and modifying it to include greater geographic detail.

The Office of Business Economics, U.S. Department of Commerce agreed to prepare data and projections for the overall national economy and the non-agricultural sectors of the national and regional economies. The elements describing the projected national economy include population, total employment, gross national product, personal income and per capita income. The U. S. Department of Agriculture agreed to prepare data and projections for the agricultural economy. These data and projections were to include production, land use, agricultural employment and income. The projections, although developed by separate agencies, were to be closely coordinated so that they would be consistent, and based upon similar sets of assumptions.

The U. S. Department of Agriculture commitment now consists of four phases. The first is the development of a file of historic data relating to the

agricultural economy and a system to retrieve the data in a form useful for river basin planning. The second phase consists of preparing preliminary projections of the agricultural economy for the United States and its major water resource regions. The third phase calls for similar preliminary projections for sub-basin areas within the major water resource regions. This phase is to be completed by the end of calendar year 1967. The fourth phase is to produce a set of revised projections with alternative assumptions about key elements for each water resource region and sub-basin by December 1969.

Key elements of the information system required by Phase I are now operational. This report contains limited historical information from that data system because it is supplied to each river basin study on request. Requests from the following Type I studies were met: North Atlantic, Missouri, and Columbia-North Pacific as well as requests from studies involving smaller river basins.

The following report represents the output of the second phase described above. Data presented here are preliminary projections of food and fiber production, agricultural income, employment and land use for the United States and its 17 Water Resource Regions. The national totals exclude Hawaii, and Alaska.

The projections are based upon examination of historical trends, analysis of current relationships and an evaluation of foreseeable developments. The major forces considered in the projections are population growth; shifts in consumer demands, industrial and other uses of agricultural commodities;

livestock feeding efficiencies and feed ration composition; foreign demand for agricultural products; and the advance of technology in the production of crops and livestock. Additional comments about each of the above elements are included in the sections that follow.

The preliminary projections of total domestic production of industrial wood for 1980, and 2000 are taken from the Forest Service report, "Timber Trends in the United States." Estimates for 2020 are added to meet the objectives of river basin planning. The projections of timber product output by major water resource regions and the related estimates of employment and payrolls are based to a large extent on prospective timber supplies. These are based on projections of timber growth in the Eastern regions and projections of allowable cut in the Western regions. All projections are subject to revision when more detailed studies of forest resource supplies and development of timber-based industries in each region are completed at regional Forest Experiment Stations.

Appropriate use of these projections requires a full appreciation of the nature of economic projections and the underlying assumptions on which they are founded. An economic projection may be defined as a conditional quantitative estimate of future economic activity based on a framework of basic assumptions. Short-term projections are obviously more valid than long-term projections. Major shifts in the rates of population growth development, development of new technology or other developments could modify materially the underlying assumptions and hence the long-term projections of agricultural and forestry output. Thus, the projections for 2000 and 2020 are more indicative of directional change than specific quantitative estimates of the future.

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NATIONAL PRODUCTION OF FOOD, FIBER, AND TIBER PRODUCTS

By 1980 the growing economy of the United States is expected to consume about two-fifths more agricultural products than the average production during the 1959-61 period (Table 1.). Use of industrial timber products, excluding pulpwood, will be about one-fourth above the 1962 level, while pulpwood use will exceed the 1962 production by more than four-fifths (Table 2.).

Largest increases are projected to occur in oil crops. Production of these crops in 1980 is projected to be double the 1959-61 average. Production in several commodity groups is projected at one and a half times the 1959-61 average. These groups include the following: Hay and forage crops; food grains; vegetables, fruits, and sugar crops; meat animals and poultry products. Increases in production of feed grains, cotton, tobacco, milk and miscellaneous crops range from 15 to 37 percent.

Further increases are projected for the years 2000 and 2020 as population continues to grow and the expanding economy provides an expanding market for agricultural and forestry output. Pulpwood production in 2000 is projected at three times the 1962 level. By the year 2000 production of livestock and livestock products as well as food grains is projected to be nearly double the 1959-61 average with further significant increases shown for the year 2020. Production of feed crops as well as oil and fiber crops is projected to advance less rapidly, but by 2020 will still be more than twice the 1959-61 average. Output of industrial timber products will increase a little more than a half during the projection period.

Table 1.--Preliminary projections of production of major agricultural product groups, United States, 1980, 2000, and 2020 1/

Commodity group <u>2/</u>	Projections		
	1980	2000	2020
	<u>Index</u>	<u>Index</u>	<u>Index</u>
Feed crops-----	140	182	234
Feed grains-----	137	XXX	XXX
Hay and forage-----	147	XXX	XXX
Food crops-----	150	196	261
Food grains-----	153	XXX	XXX
Vegetables, fruits, sugar---	153	XXX	XXX
Other food crops-----	123	XXX	XXX
Oil and fiber crops-----	144	182	235
Oil crops-----	207	XXX	XXX
Cotton-----	117	XXX	XXX
Tobacco-----	115	XXX	XXX
Livestock and products-----	142	196	273
Meat animals-----	152	XXX	XXX
Milk-----	118	XXX	XXX
Poultry products-----	147	XXX	XXX

1/ Projections are indexes of physical volume, 1959-61 = 100.

2/ Items included in each commodity group are as follows:

Feed grains: Corn, oats, barley, sorghum grain;

Hay and forage: Hay, silage, straw, stover, pulp;

Food grains: Wheat, rye, rice;

Vegetables, fruits, sugar: Vegetables, citrus and non-citrus fruits, nuts, sugar cane, sugar beets;

Other food crops: Potatoes, sweet potatoes, dry beans, dry peas;

Oil crops: Soybeans, peanuts, flaxseed;

Meat animals: Beef, veal, pork, lamb, mutton, and;

Poultry products: farm chickens, turkeys, eggs, broilers.

Table 2.--Production of industrial timber products, 1962; with preliminary projections to 1980, 2000, and 2020, United States 1/

Commodity <u>2/</u>	Unit	1962	Projections		
			1980	2000	2020
	(mil.)	(mil.)	(mil.)	(mil.)	(mil.)
Industrial timber products:					
Saw logs (lumber)---	Cu. ft.	5,190.0	6,110.0	7,170.0	7,870.0
Veneer logs (veneer and plywood)-----	Cu. ft.	860.0	1,540.0	2,160.0	2,400.0
Other miscellaneous industrial timber products-----	Cu. ft.	465.0	460.0	460.0	460.0
Total-----	Cu. ft.	6,515.0	8,110.0	9,790.0	10,730.0
Pulpwood-----	Cords	41.7	78.4	128.6	142.2

1/ Estimates exclude Hawaii, Alaska, and the Tennessee Valley.

2/ Industrial timber products includes all round timber products harvested from the forests, except fuelwood, and used as the wood raw material in the Lumber and Wood Products Industries (Major group 24 as defined in the Standart Industrial Classification Manual). Saw logs are used to manufacture lumber; veneer logs to manufacture veneer and plywood; and other miscellaneous timber products to manufacture a host of items such as cooperage, utility poles, and charcoal. Pulpwood includes the wood raw material used in the Pulp, Paper, and Allied Products Industries (Major group 26 as defined in the Standard Industrial Classification Manual) for the manufacture of wood pulp. The volumes shown include roundwood harvested directly from the forests and plant byproducts, obtained from other wood manufacturing plants such as sawmills and veneer and plywood plants; and used in the manufacture of wood pulp.

These projections, as well as all others in this report, represent an economy where agricultural production is in balance with estimated future demand. The projections of future demand draw on numerous analyses and appraisals. Some are based upon formal statistical models, others on trends and a knowledge of factors affecting them. Accordingly, the projections consider, implicitly or explicitly, important factors which will shape the growth and development in agriculture in the years ahead.

Further reductions in the number of farms are in prospect as smaller farms are consolidated into larger commercial family farms. Continued substitution of capital and other inputs for labor and land as well as other shifts in the organization and use of resources will result in great gains in productivity in farming. Other factors influencing the future agricultural economy will be discussed in subsequent portions of this report.

Several important forces that affect the future agricultural economy were explicitly considered in developing the projections of demand for agricultural products. Among these are the following:

- (1) Population growth;
- (2) Rising per capita disposable income, changes in consumer tastes and their influence on per capita uses of agricultural products;
- (3) Industrial and other uses of agricultural commodities;
- (4) Livestock feeding efficiencies and composition of the feed ration; and
- (5) The foreign market for agricultural products.

Projected domestic consumption of food commodities for each target date was derived by applying projected per capita consumption rates to projected population and is the principal determinant of projected production. Quantities were projected which represent industrial and other uses of agricultural products. These were added to domestic consumption to derive projections of total domestic production requirements. Net demand from the foreign market was added to the projected domestic requirements. Projections of feed grains, hay and other harvested forage were derived by estimating feed requirements for projected livestock output and adding to that the projected non-feed uses of certain crops in this category. Although per capita consumption was projected to remain unchanged after 1980, changes in total projected production are not equal in all cases to changes in population after that date. This occurs because rates of change in the other factors are different from those for population.

National Economic Framework

In order to develop projections of this type, certain assumptions relating to the basic economy and its structure must be established. The most significant of these will be presented in this report. The initial assumptions cover the general economic indicators and provide a framework within which the remaining projections can be developed. Projections of these general economic indicators - population, employment, gross national product, and personal income - were supplied by the Office of Business Economics, U.S. Department of Commerce. Of most significance is the projected increase in these aggregate economic variables (Table 3.).

An increasing population will require expanded output of agricultural products. Rising employment levels will furnish alternative employment opportunities for workers leaving the farm sector. A sustained level of economic growth (measured by gross national product) will provide a favorable general economic environment with sustained demand for farm output.

Population projections were based on the Series B estimates of the Bureau of the Census. One of four alternative projection levels, Series B assumes moderately high fertility rates which are slightly lower than the rates prevailing since World War II. On this basis, the 1980 population of the United States is projected to increase by 64.6 million persons, about 35 percent over the 1960 level. By the year 2000, the population is projected to increase by 92.9 million over the 1980 level, while a further increase of 130.9 million is expected between 2000 and 2020. Thus, the population in 2020 is projected to be about two and a half times the 1960 level.

Table 3.--National economic framework, United States, 1960; with projections for 1980, 2000 and 2020

Item	Unit	1960	Projections			
			1980	2000	2020	
Population ^{1/}	Million	180.7	245.3	338.2	469.1	
Employment ^{2/}	Million	66.4	94.8	130.6	181.2	
Gross national product ^{3/}	Dollars	440	1,001	2,144	4,686	
Personal income ^{3/}	Dollars	352	785	1,680	3,630	
Per capita income ^{3/}	Dollars	1,955	3,200	4,967	7,738	

Source: Office of Business Economics, U.S. Department of Commerce as adapted by the Water Resources Council for river basin planning.

^{1/} Includes Armed Forces abroad

^{2/} Census of Population concept; excludes those stationed overseas

^{3/} In terms of 1954 dollars

The consumption of the major agricultural products per person has changed with rising incomes, shifting tastes, substitute products, and lower relative prices. However, the projections of per capita consumption inherent in the aggregate projections contained in this report were held unchanged beyond 1980. This assumption was made primarily because of limitations of data, but was also partially based upon the assumption that further increase in personal income beyond the 1980 level would have little significant influence on per capita consumption. The influence of substitute products that have not yet been developed is virtually impossible to project. It is equally difficult to project significant changes in consumer tastes. Consequently the per capita projections represent our best quantification of factor influences now known or reflected in historic data. The projected prices for farm products inherent to these projections generally fall in the range of recent years. Projected prices for crops are slightly lower than in recent years. On balance, livestock prices are projected to be somewhat higher than crop prices in 1980, a reversal of their 1960 relationship.

Per capita consumption of meats is projected to increase throughout the 1960 to 1980 period (Table 4.). Consumption of eggs and dairy products is projected to decline, as will consumption of cereal grain and cotton. Projected vegetables and fruit consumption per person will increase while sugar and tobacco rates are projected to remain essentially unchanged from the 1959-61 average consumption. Oil crops consumption will increase markedly as industrial uses expand. Most of these projections were based upon historic trends and evaluated from the standpoint of being reasonable or realistic.

Table 4.--Per capita use of major farm products, United States 1959-61 average with projections to 1980

Commodity	1959-61	1980
	Pounds	Pounds
Livestock & livestock products:		
Beef (carcass wt.)-----	84.7	112.0
Veal (carcass wt.)-----	5.8	5.0
Pork (carcass wt., excluding lard)-----	64.8	65.5
Lamb and mutton (carcass wt.)----	4.9	3.5
Chickens (ready-to-eat)-----	29.1	34.5
Turkeys (ready-to-eat)-----	6.6	11.0
Eggs (number)-----	337.0	290.0
Milk (fat solids basis)-----	657.0	570.0
Grain crops:		
Corn-----	46.0	52.0
Oats-----	7.3	7.0
Barley-----	1.4	1.3
Wheat-----	165.0	143.0
Rye-----	1.4	1.3
Rice (rough)-----	8.1	10.0
Oil crops & miscellaneous:		
Soybeans-----	149.2	217.4
Peanuts (farm stock)-----	7.2	9.1
Flax-----	7.0	4.0
Cotton-----	23.4	20.5
Tobacco-----	7.6	7.6
Food crops:		
Sugar (raw equivalent)-----	104.0	104.0
Dry beans-----	7.7	7.4
Dry peas-----	.4	.1
Potatoes-----	110.0	110.0
Sweet potatoes-----	6.4	5.5
Vegetables (fresh basis)-----	205.0	216.0
Melons (fresh basis)-----	25.0	20.0
Citrus fruits (fresh basis)-----	82.0	84.0
Non-citrus fruits (fresh basis)---	113.0	122.0
Tree nuts (shelled)-----	1.6	1.6

Projecting international developments and foreign trade patterns is difficult and is quite hazardous beyond the immediate future. We can assume that certain rates of import and export may be stable and predictable through a decade or two, but beyond that range international trade is unpredictable. In any case, the foreign market is subject to wide variations due to international policy changes. In this report, foreign trade levels were projected for 1980 and remained at those levels for 2000 and 2020. Analyses to be incorporated in the revised projections, referred to in the Foreword of this report will develop alternative levels of foreign demand and the affect on U.S. agricultural output will be evaluated. Foreign market projections assume levels that would be attained if quantity increase for each decade from 1960 to 1980 closely matched the quantity increase of the 1950-60 decade.

In this report, both import and export volume is expected to increase over the 1959-61 level, but some decreases will take place in particular commodities (Table 5.). Increases are projected for imports of beef, pork, milk, vegetables, noncitrus fruits and tree nuts. Decreases are expected for imports of lamb and mutton, barley, rye, oats, rice and sugar. Exports of livestock and livestock products, corn, wheat, rice, sorghum, soybeans, vegetables, fruits, cotton and tobacco are projected to increase. These increases are greatest in the case of milk products, corn, grain sorghum, wheat and soybeans. On balance, the foreign market demand for United States agricultural products is projected to increase considerably above the 1959-61 average level. However, in 2000 and 2020 it is projected as a smaller portion of total production than in 1980.

An important consideration in projecting feed crop production is the changes in livestock feeding efficiencies and composition of feed rations. Livestock

Table 5.--Foreign market: Imports and exports of major farm products, United States, 1959-61 with projections to 1980 ^{1/}

Commodity	1959-61 Average		1980	
	Imports	Exports	Imports	Exports
	Million pounds		Million pounds	
Livestock & livestock products:				
Beef and veal (carcass wt.)-----	959	56	1,850	150
Pork (carcass wt., excluding lard)-----	186	140	275	225
Lamb and mutton (carcass wt.)-----	97	2	43	2
Chickens (ready-to-eat)----	0	190	0	290
Turkeys (ready-to-eat)----	0	21	0	40
Eggs-----	37	880	19	562
Milk (fat solids basis)----	647	1,153	871	4,539
Grain crops:				
Corn-----	56	14,728	56	40,880
Oats-----	48	947	0	800
Barley-----	835	4,618	70	4,410
Sorghum-----	0	5,005	0	11,061
Wheat-----	420	37,842	480	66,000
Rye-----	140	381	50	390
Food crops:				
Rice (rough)-----	40	3,120	20	5,180
Sugar (raw equivalent)-----	11,478	106	10,300	106
Dry beans-----	9	237	18	378
Dry peas-----	0	205	0	322
Potatoes-----	70	390	120	340
Sweet potatoes-----	0	7	0	7
Vegetables and melons (fresh basis)-----	890	1,280	1,200	2,500
Citrus fruit (fresh basis)---	122	1,789	158	2,194
Non-citrus fruit (fresh basis)-----	4,778	1,651	6,142	2,026
Tree nuts (shelled)-----	236	26	322	87
Oil crops & miscellaneous:				
Flaxseed-----	0	313	0	280
Soybeans-----	0	8,492	0	25,000
Peanuts (farm stock)-----	1	70	1	50
Cotton-----	76	3,122	100	3,500
Tobacco (farm wt. basis)---	162	493	211	572

^{1/} Projections are preliminary.

feeding efficiencies are projected to increase moderately during the projection period. This is reflected by reductions in the feed required per pound of livestock produced, as shown in Figure 1. The projected feed ration contains a higher proportion of concentrates than in the recent past. The combined effect of these two factors resulted in increased feed requirements consistent with an expanded need for meat. For some species, for example beef and veal, the requirement for concentrate feed increases more rapidly than the projected production of beef and veal.

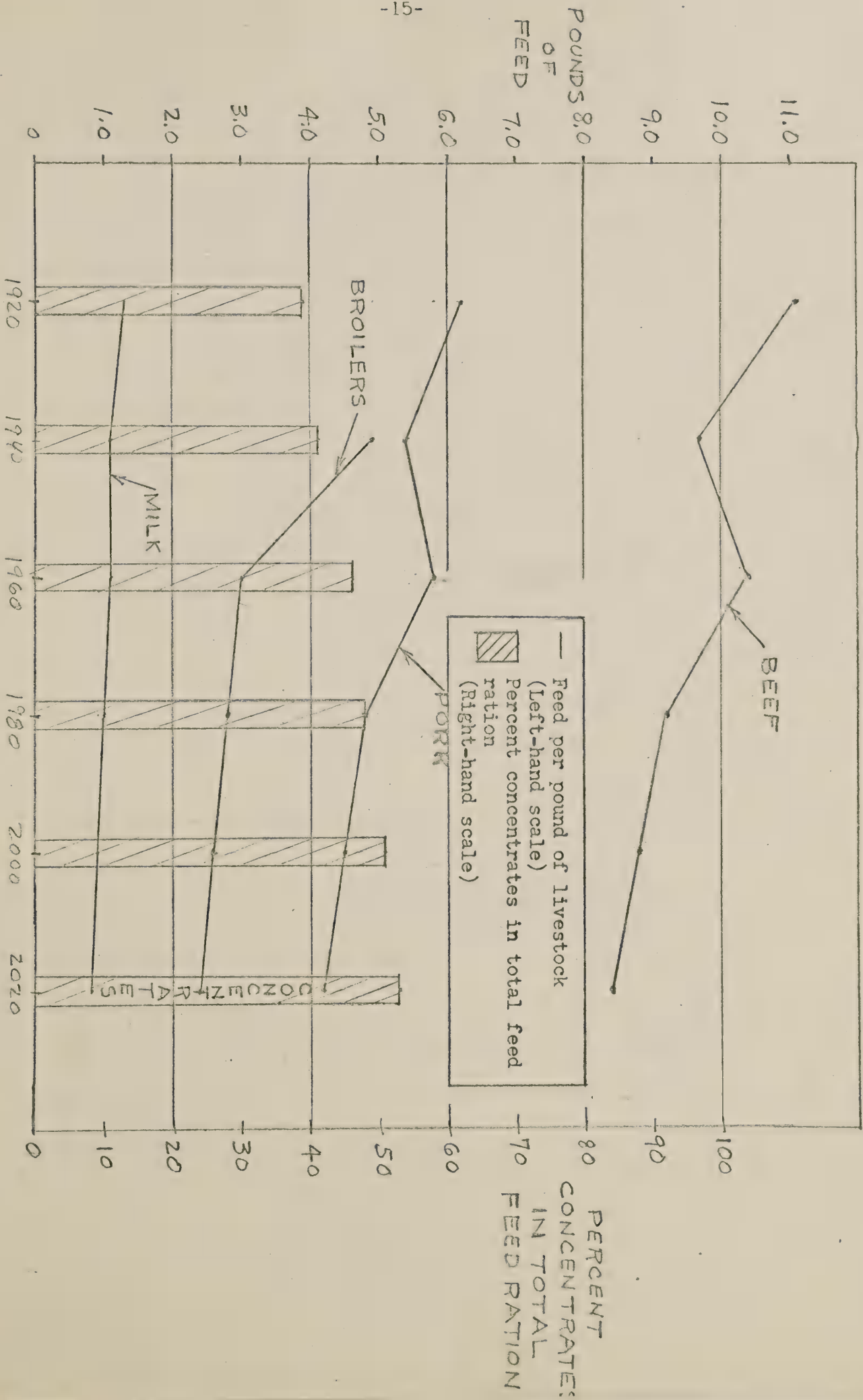


FIGURE 1. POUNDS OF FEED (CORN EQUIVALENT) CONSUMED PER POUND OF LIVESTOCK PRODUCED, SELECTED TYPES OF LIVESTOCK, AND PERCENT OF CONCENTRATES IN THE FEED RATION, ALL LIVESTOCK, UNITED STATES

AGRICULTURAL LAND USE

The national projections of production, shown in table 1 for the major agricultural products, were translated into acreage requirements. Table 6 shows the 1959 acreage and the projected acreages for 1980, 2000, and 2020 for the major commodity groups, including cropland pasture. These acreage projections were determined by dividing the projected production by the projected levels of productivity (per acre) for 1980, 2000, and 2020.

Improvements in agricultural production technology have accounted for most of the increased productivity during the past twenty years. A general measure of these forces is provided by the trends in average crop yield per acre. The most important source of this increase was expanded use of commercial fertilizer. Shifts of higher value crops to better soils, improved varieties, and increased use of pesticides also contributed to larger yields.

The 1980 yield estimates reflect a continuation of these recent trends in agricultural productivity. Particular developments that could result in increased production beyond 1980, are largely speculative. However, it is assumed that new breakthroughs will continue in the agricultural research sector, therefore crop yields were projected to increase from 1980 through 2020. For most of the major crops, the yield advances were projected to increase faster through 1980 than in subsequent years (Figures 2-6).

OATS

BUSHELS

90

80

70

60

50

40

30

20

10

0

HARVESTED ACREAGE

YIELD PER HARVESTED ACRE

MILLION
ACRES

80

70

60

50

40

30

20

10

0

BARLEY

BUSHELS

80

70

60

50

40

30

20

10

0

YIELD PER HARVESTED ACRE

HARVESTED ACREAGE

MILLION
ACRES

80

70

60

50

40

30

20

10

0

1910

1920

1930

1940

1950

1960

1980

2000

2020

TOBACCO

POUNDS

THOUS.
ACRES

5000

4000

3000

2000

1000

0

YIELD PER HARVESTED ACRE

HARVESTED ACREAGE

2000

1500

1000

500

0

PEANUTS

POUNDS

THOUS.
ACRES

3000

2000

1000

0

HARVESTED ACREAGE

YIELD PER HARVESTED
ACRE

5000

4000

3000

2000

1000

0

1910

1920

1930

1940

1950

1960

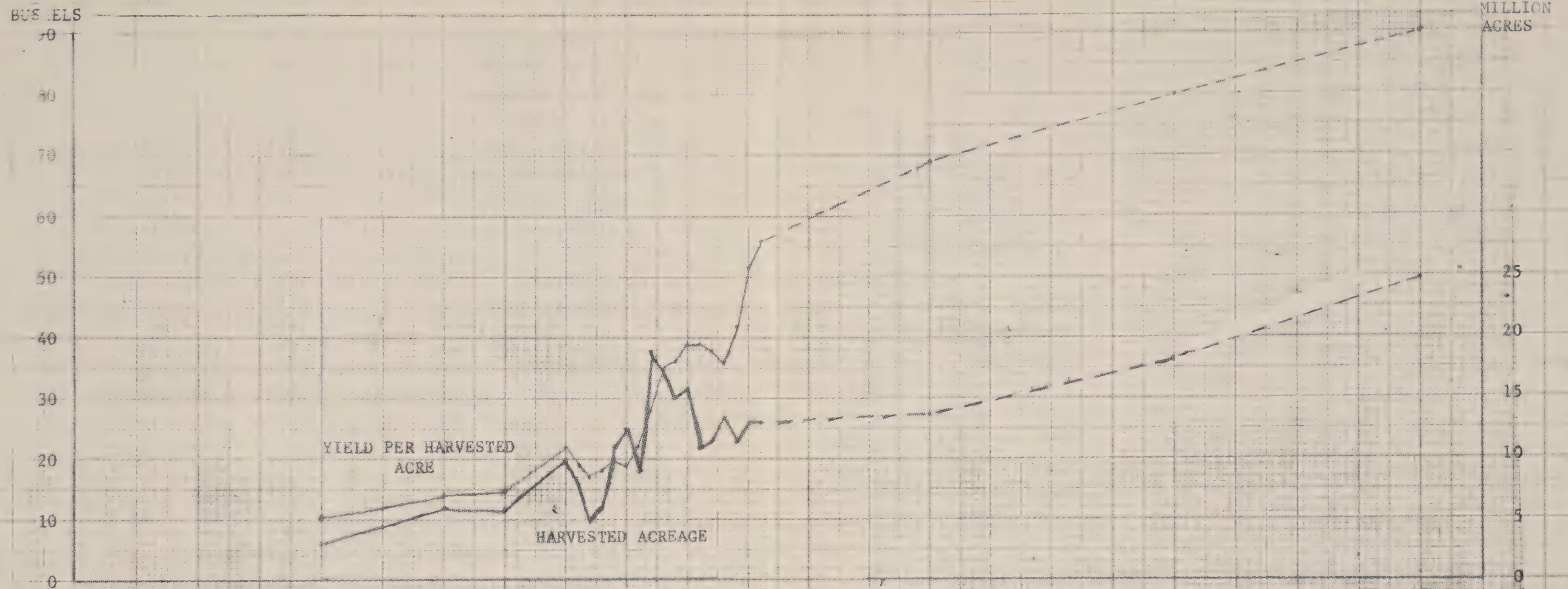
1980

2000

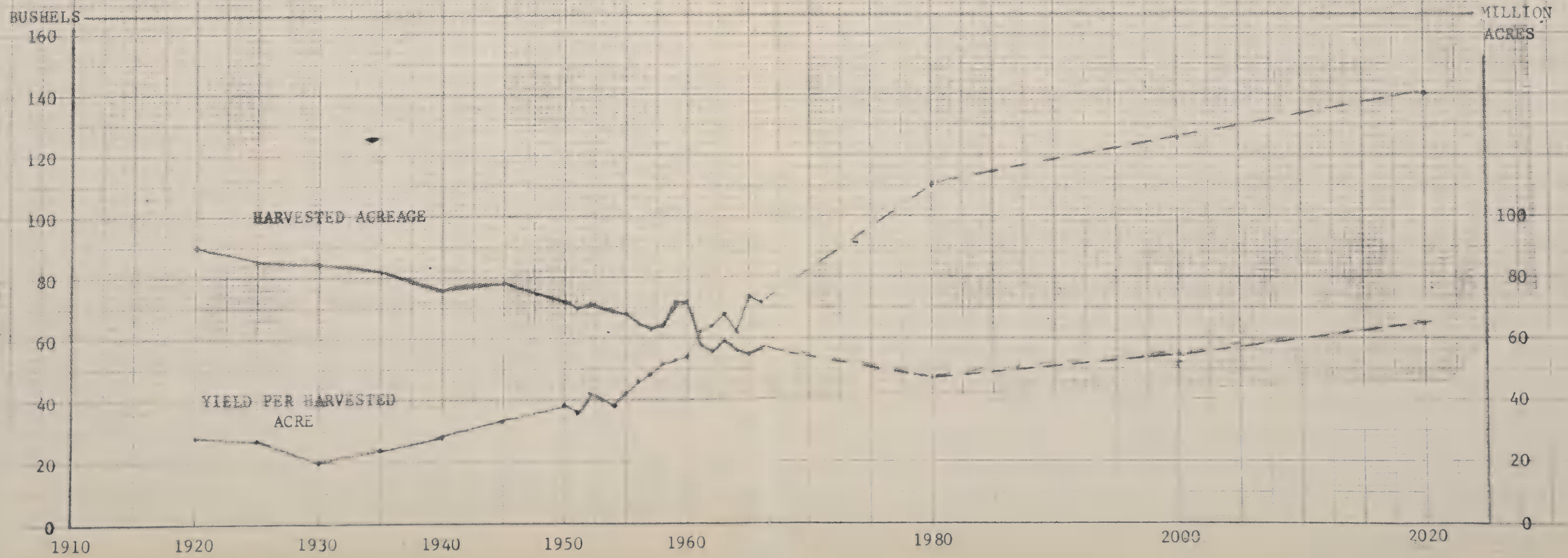
2020

0

SORGHUM GRAIN



CORN FOR GRAIN



COTTON

POUNDS

MILLION
ACRES

1000

50

800

40

600

30

400

20

200

10

0

0

HARVESTED ACREAGE

YIELD PER HARVESTED ACRE

RICE

BUSHELS

MILLION
ACRES

8000

7000

6000

3

5000

2

4000

1

3000

0

2000

1000

0

HARVESTED ACREAGE

YIELD PER HARVESTED ACRE

1910

1920

1930

1940

1950

1960

1980

2000

2020

WHEAT

BUSHELS

90

80

70

60

50

40

30

20

10

0

HARVESTED ACREAGE

YIELD PER HARVESTED ACRE

MILLION
ACRES

80

70

60

50

40

30

20

10

0

SOYBEANS

BUSHELS

50

40

30

20

10

0

HARVESTED ACREAGE

YIELD PER HARVESTED ACRE

MILLION
ACRES

50

40

30

20

10

0

1910

1920

1930

1940

1950

1960

1980

2000

2020

In 1959, about 264 million acres of cropland was used to produce feed for livestock, (Table 6). Feed grains were harvested from almost half of this acreage, while the remainder was used for production of roughage. By 1980, the acreage of cropland used for the production of feed crops is projected to decline to about 201 million acres. A slightly higher proportion of this acreage will be used for roughage production than was used in 1959. After 1980, small increases in the acreage used to produce feed crops were projected for 2000 and 2020.

Acreage for food crops shows an upward trend through the projection period. These crops utilized about 64 million acres of cropland in 1959. By 1980, this acreage will increase to about 71 million acres and by 2020 to 82 million acres.

The production of oil, fiber and miscellaneous crops will use more land in the projection period than in 1959. In 1980, the acreage will increase to a little more than 64 million from the 47.5 million acres used in 1959. A slight decline from the 1980 level is projected for 2000 but by 2020 the acreage will be greater than the 1980 level by 1.7 million.

Most of the increase in acreage used for the oil, fiber and miscellaneous crop group is accounted for by the substantial increase in land used to produce oil crops. The 1980 production of these crops will use about 46 million acres, nearly 20 million more than in 1959. Acreages of the remaining crop groups show relatively little change as increased total production is nearly offset by increased yields per acre.

Table 6.--Acreages of major crops, United States, 1959 with projections to 1980, 2000 and 2020 1/

Land use <u>2/</u>	1959	Projections		
		1980	2000	2020
	1,000	1,000	1,000	1,000
	acres	acres	acres	acres
Feed crops-----	264,418	200,951	206,339	218,559
Grains-----	125,383	89,908	XXX	XXX
Roughage-----	139,035	111,043	XXX	XXX
Food crops-----	64,492	71,161	73,994	82,426
Grains-----	52,776	57,226	XXX	XXX
Vegetables, fruits and				
sugar-----	8,684	10,774	XXX	XXX
Other-----	3,032	3,161	XXX	XXX
Oil, fiber and miscellaneous				
crops-----	47,591	64,108	62,434	65,777
Oil-----	26,194	46,001	XXX	XXX
Cotton-----	14,644	11,450	XXX	XXX
Tobacco and miscellaneous--	6,753	6,657	XXX	XXX
Total cropland harvested:				
and used for pasture <u>3/-</u>	376,433	336,152	342,699	366,734

1/ Projections are preliminary.

2/ Commodities included in each group are as follows: Feed grains--corn, grain sorghum, oats and barley; Roughages--hay, silage, forage and cropland pasture: Food grains--wheat, rye and rice; Vegetables fruits and sugar--Vegetables for fresh market and processing, citrus and noncitrus fruits, nuts, sugar beets and sugar cane; Other food crops--potatoes, sweet potatoes, dry beans and dry peas; Oil crops--soybeans, peanuts and flaxseed.

3/ Total acreage of feed crops, food crops and oil, fiber and miscellaneous crops exceeds the acreage of total cropland harvested and used for pasture due to double cropping.

THE AGRICULTURAL RESOURCE BASE

The 1,902 million acre expanse of the United States consists of many different kinds of soil under diverse climatic conditions. Because of these different characteristics, the development and use of our land resources varies considerably between and within the Water Resource Regions of the United States.

While the total acreage of agricultural land fluctuated very little in the past 40 years, significant changes in major uses for agricultural purposes took place. Increased production from fewer cropland acres was made possible by increased use of fertilizer, other improved technology, and improvement of some lands by drainage, flood control and irrigation. Government supply control programs took land out of crop production. Thus the acreage used for crop production decreased about 50 million acres in the past 15 years while total farm output increased by more than a third.

For purposes of this report the total land base was divided into five major categories--cropland, pasture and range, forest and woodland, other agricultural land, and non-agricultural land.^{1/} About 90 percent of the total land area of the United States was classified as agricultural in 1959 (Table 7). Urban and other built-up areas accounted for three percent and other special and miscellaneous uses accounted for the remaining seven percent.

Between 1950 and 1960, urban and other built-up areas absorbed an average of about one million acres of rural land each year. An additional million

^{1/} See the appendix for definitions of land included in each category.

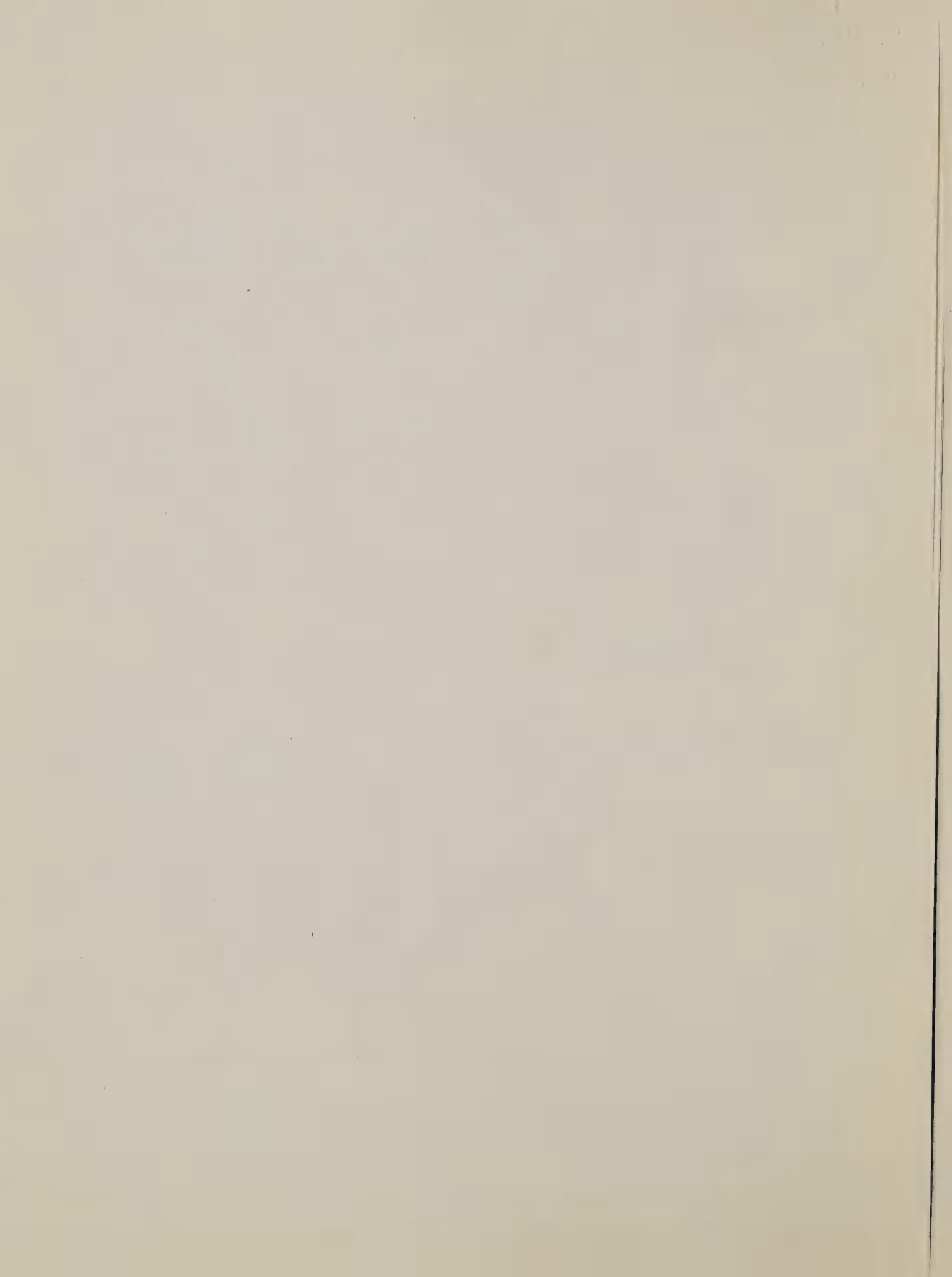
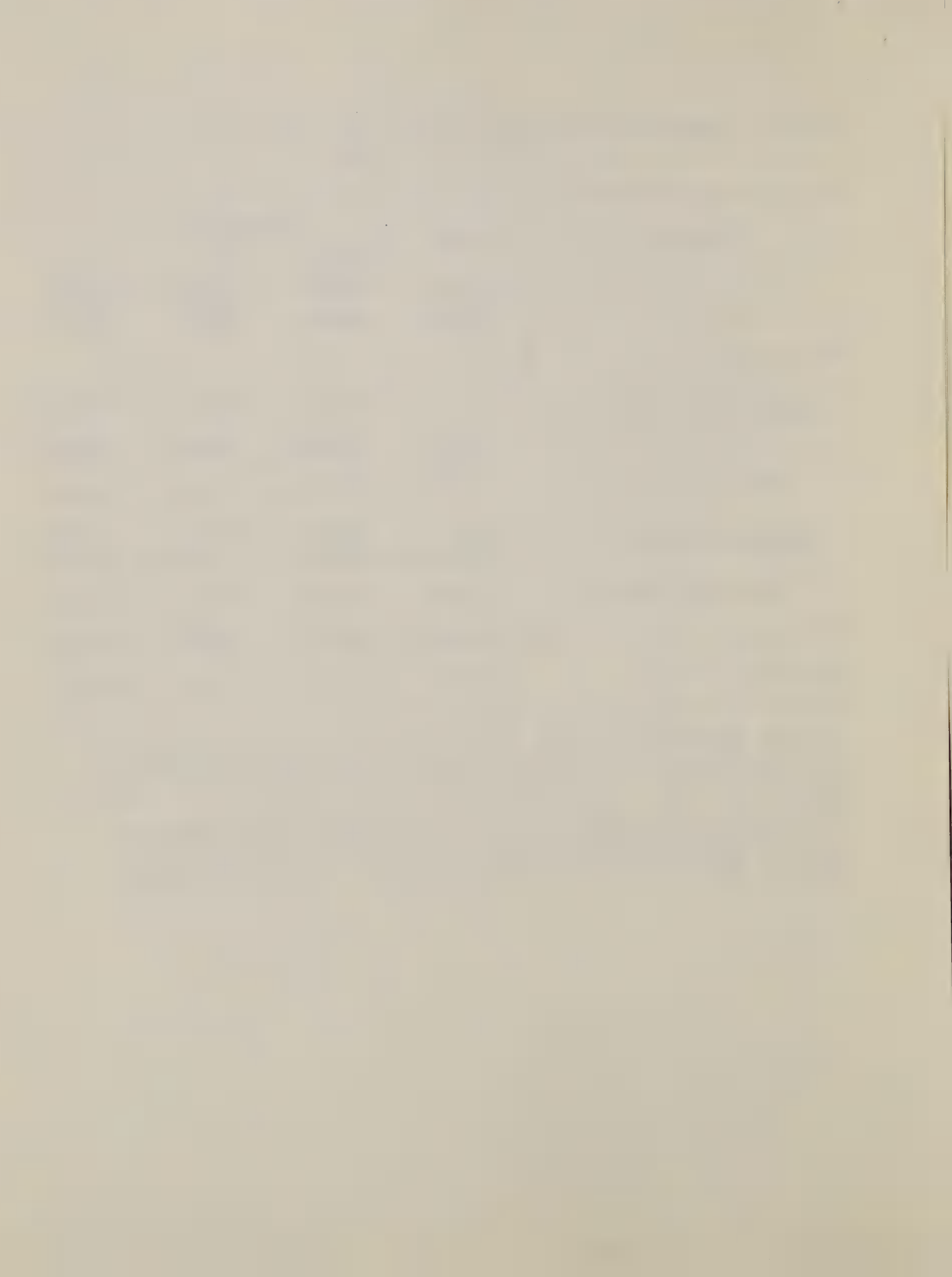


Table 7.--Land utilization: United States, 1959 with preliminary projections to 1980, 2000 and 2020.

Land use	1959	Projections		
		1980	2000	2020
	1,000	1,000	1,000	1,000
	<u>acres</u>	<u>acres</u>	<u>acres</u>	<u>acres</u>
Agriculture:				
Cropland harvested and used for pasture-----	1/382,575	336,152	342,699	366,734
Cropland idle, fallow and crop failure-----	74,909	88,483	72,918	40,645
Total cropland-----	457,483	424,635	415,617	407,379
Pasture and range-----	630,131	649,270	642,351	649,517
Forest and woodland-----	637,253	622,912	605,209	567,130
Total agricultural ^{2/} -----	1,724,867	1,696,817	1,663,177	1,624,027
Other land-----	176,889	204,939	238,579	277,729
Land area-----	1,901,756	1,901,756	1,901,756	1,901,756

^{1/} An upward adjustment of about 1.6 percent in the acreage of cropland harvested reported by the Census of Agriculture was made to conform to estimates in "Major Uses of Land and Water in the United States", Agricultural Economic Report No. 13, U. S. Department of Agriculture.

^{2/} Includes 32,643,000 acres of irrigated land in 1959 (Census of Agriculture) and assumed acreages of irrigated land in projection years as follows: 1980--41,955,000; 2000--44,501,000; and 2020--45,767,000.



acres of rural land for water supply and flood control areas, national defense, wildlife refuges, etc., were taken annually. Thus, the areas of non-agricultural uses have increased about two million acres annually over the past decade.

The decline in the acreage of land available for agricultural purposes will continue during the projection period. By 2020 total agricultural land is projected to decline by about 100 million acres below the 1959 acreage. Even so, agricultural land will account for 1,624 million acres or about 85 percent of the total land area. Total cropland, including idle, fallow, and crop failure will account for about a fourth of the agricultural land throughout the projection period. However, the actual acreage in this category will decline steadily. The acreage of cropland harvested and used for pasture is a summation of the projected acreage of the major crops (Table 6).

Approximately 25 million acres of poor-quality land presently cropped, Capability classes V through VIII, was not considered as potentially available cropland. This acreage was assumed to revert to pasture or range in the projection period. Land in forest and woodland cover will decline from about 37 percent of total agricultural land in 1959 to 34 percent in 2020. However, the projected area of commercial forest land is maintained without significant change (Table 8). This assumption reflects the expectation that possible gains in commercial forest area from the reversion of cropland and pasture will be offset by diversions to other uses such as residential areas, highways, reservoirs, and transmission lines. Further

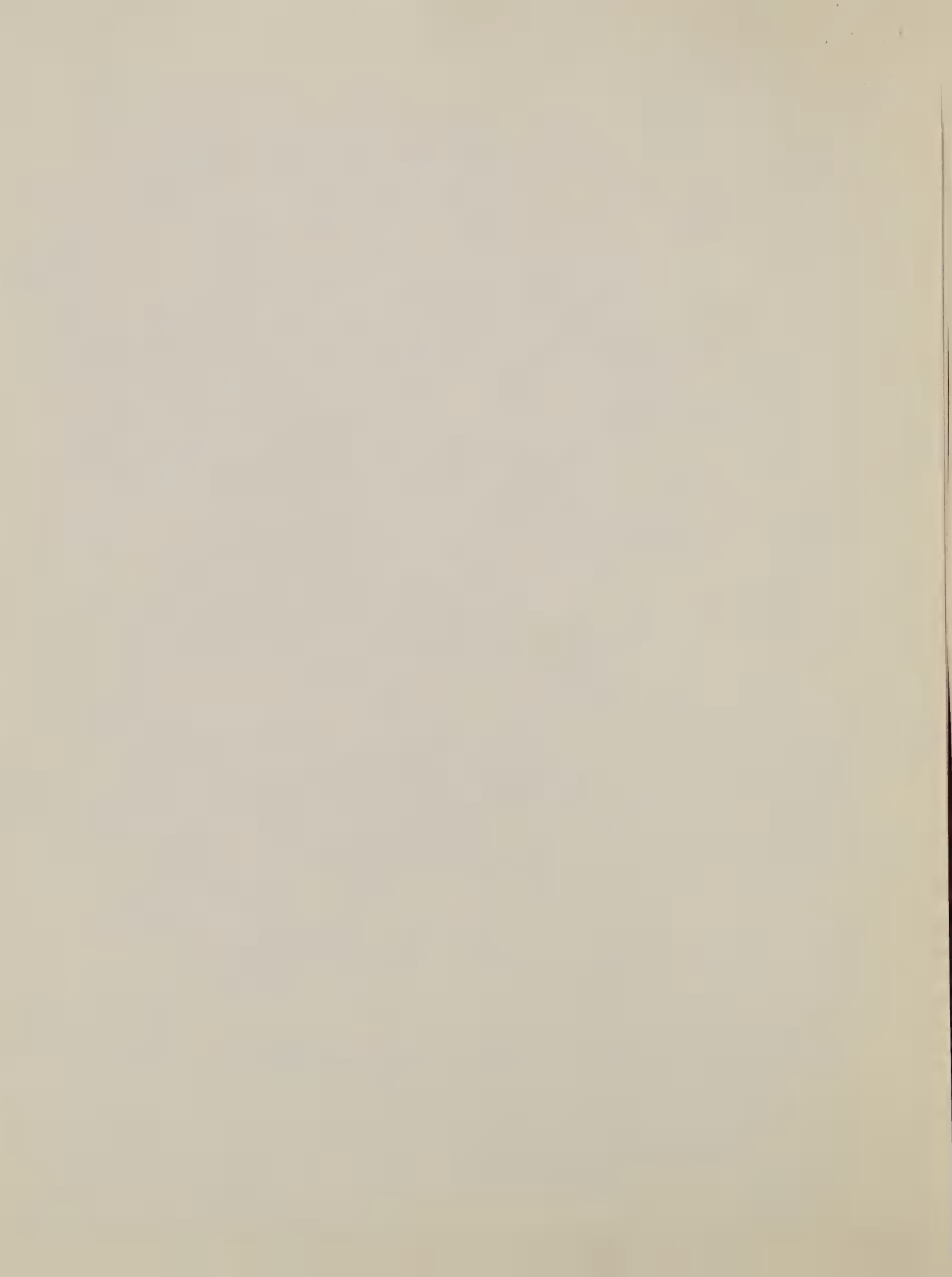


Table 8.--Commercial forest area, Water Resource Regions, 1962 with preliminary projections to 1980, 2000 and 2020

Water Resource Region	1962	Projections		
		1980	2000	2020
	1,000			
	<u>acres</u>			
North Atlantic-----	64,241	<p>The projections of industrial timber production shown in the following sections have been based on the assumption that the present area of commercial forest land will be maintained without significant change. This assumption--which reflects the expectation that possible gains in commercial forest area from the reversion of cropland and pasture will be offset by diversions to other uses such as residential areas, highways, reservoirs, and transmission lines--will be examined in detail in studies in each Region.</p>		
South Atlantic-Gulf-----	107,175			
Ohio ¹ /-----	39,916			
Great Lakes-----	37,116			
Upper Mississippi-----	23,528			
Souris-Red-----	5,228			
Missouri-----	23,466			
Arkansas-White-Red-----	39,961			
Lower Mississippi-----	17,651			
Rio Grande-----	6,190			
Texas-Gulf-----	13,130			
Upper Colorado-----	9,566			
Lower Colorado-----	6,064			
Great Basin-----	2,146			
California-----	19,870			
Columbia-North Pacific-----	70,432			
Total-----	485,680			

¹/ Excludes the Tennessee Water Resource Region.

analysis of this assumption will be made as a part of the revised projections discussed in the Foreword.

In 1959, slightly more than 33.5 million acres of agricultural land was irrigated.^{2/} This included cropland as well as pasture and range to which water was applied by artificial means. In each of the projection years a level of irrigated acreage within the agricultural land category was assumed. This acreage was based on a continuation of private irrigation development generally in accord with recent trends plus the acreage in Federal projects now under construction or authorized for construction. After 1980 the assumed acreage of irrigated land do not include additional public development. These assumed irrigated land acreages provide a base from which the economic effects of additional public irrigation development may be considered and analyzed.

A concerted effort was made to achieve a balance between resource potentials and projected output, particularly for the 2020 major land use projections. It appears that the national agricultural resource base is adequate to support projected levels of output since the projected acreage of cropland harvested and used for pasture in 2020 is slightly less than was used in 1959. Even though the projected production in 2020 is more than double that of 1959-61, this increase is more than offset by the increase in projected agricultural productivity.

^{2/} Based upon the 1959 Census of Agriculture.

WATER RESOURCE REGION PROJECTIONS

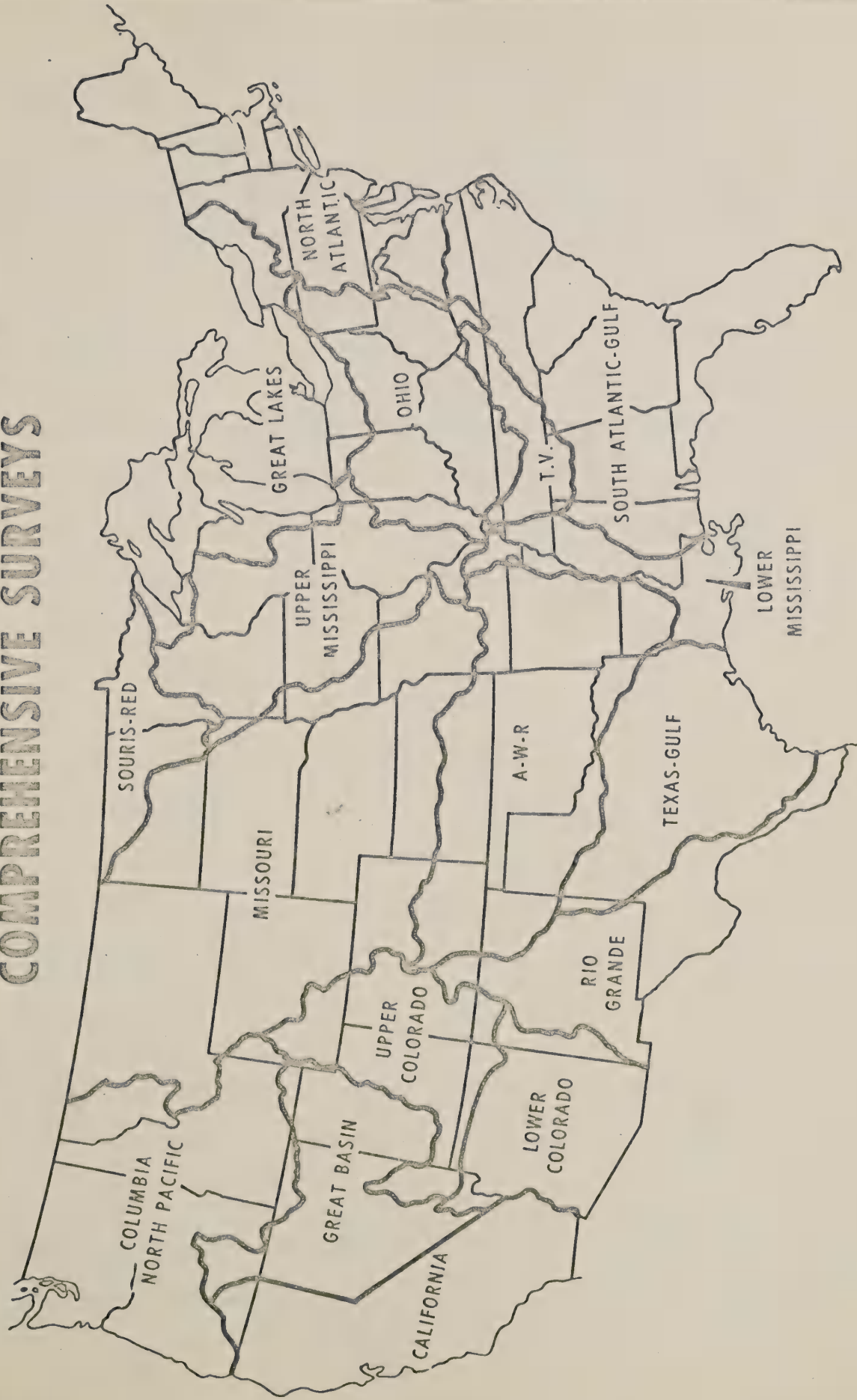
The projections of production, land use and acreages of major crops by Water Resource Region, discussed briefly below and presented in tabular form in the appendix, are consistent with the projections for the United States presented in the earlier sections of this report.^{3/} The regional production projections are based upon analysis of historical production patterns. These historical patterns were projected to 1980 with slight modifications in those Regions where the data was limited. Very little change in the production patterns among regions was projected beyond 1980. Limitations in data were the primary reason for this approach. The potential for shifts in production among regions will be examined in greater detail in the revised projections.

Generally, the production of feed crops is projected to increase most in those areas that are now committed heavily to these crops. In the Southern and Central Regions and California production of these crops will be double the 1959-61 average by the year 2000, with further increases projected to 2020.^{4/} Projected changes in food crop production show somewhat less variation among the Regions than the feed crops. Production in all areas will double by the year 2020, with two regions tripling the 1959-61 average level by that year.

^{3/} See Figure 7 for a map of the Water Resource Regions.

^{4/} See Appendix Tables 2-1 through 2-17, 5 and 6 for measures of production changes in each region.

WATER RESOURCE REGIONS FOR TYPE I COMPREHENSIVE SURVEYS



Oil and fiber crops are not generally grown in three regions. Elsewhere, most significant changes are projected for the Water Resource Regions in North Central part of the Nation - Missouri, Upper Mississippi and the Ohio. In these regions output of oil and fiber crops by 1980 is projected to approximately double, and by 2020 will be at least three times greater than the base period production.

Livestock production increases are projected to be quite general throughout the Nation with 1980 production in 13 of the 17 Regions about 50 percent above the 1959-61 base period average. Production in these Regions generally doubles the base period value by 2000 and in 2020 is about three times the 1959-61 average.

The total acreage of agricultural land is projected to decline in all regions. Losses of agricultural land to other uses will be most pronounced in those regions with largest population centers. In the North Atlantic, Great Lakes, and California Regions, agricultural land by 2020 will be about a fifth less than the 1959 acreage. Losses in the South Atlantic and Ohio Regions will approximate a tenth of the 1959 base. Elsewhere reduction in agricultural land will be smaller.^{5/}

The acreage of cropland used to produce feed crops will decline between 1959 and 1980 in all but two regions. In these two - Columbia-North Pacific

^{5/} Appendix Tables 4-1 through 4-17 contain land utilization data for each of the Water Resource Regions.

and Lower Colorado - small increases are indicated. In 2020 the feed crop acreage will be less than the 1959 level in all but four regions: Texas - Gulf, Lower Colorado, Great Basin, and Columbia-North Pacific.

In the projection period food crop production will generally require more acres in all but two regions: Rio Grande and Texas - Gulf. Oil, fiber and miscellaneous crops will also require increased acres, particularly in those Regions where soybeans are produced.^{6/}

^{6/} See Appendix Tables 3-1 through 3-17 for data on acreages of major crops in each Water Resource Region.

INCOME AND EMPLOYMENT

The economic activity in the agricultural sector of the economy can be viewed as a function of the quantities of agricultural commodities produced, and relative changes in the prices of inputs and outputs. For purposes of this preliminary report input prices were not analyzed. Two alternative levels of output prices were used - projected and normalized. Two overall measures of economic activity in the agricultural sector are provided - realized gross farm income and numbers of farm workers.

Projections of realized gross farm income shown in Table 9 are based upon projected production evaluated at normalized price levels.^{7/} These data indicated that gross farm income in the United States in 1980 will be about 50 percent above the 1959-61 average. A further increase is indicated for 2000 when income is projected to be nearly twice the 1959-61 base value. In 2020, annual realized gross farm income will approximate one hundred billion dollars, slightly more than two and a half times the 1959-61 average value.

A second estimate of gross farm income was computed on the basis of an alternative set of prices. These were projected prices in terms of 1959-61 average dollars. The projected prices reflected some relative changes in output price levels. Generally, livestock prices were projected to increase relative to prices for crops. Using these prices, realized gross farm income

^{7/} Normalized prices for Water Resource Regions were computed from data contained in "Interim Price Standards for Planning and Evaluating Water and Land Resources," Interdepartmental Staff Committee of the Water Resource Council, April 1966.

Table 9.--Realized gross farm income: 1959-61 average with preliminary projections to 1980, 2000, and 2020, United States and Water Resource Regions 1/

Water Resource Region	1959-61 average	Projections		
		1980	2000	2020
	Million dollars	Million dollars	Million dollars	Million dollars
North Atlantic-----	3,098	3,817	5,175	7,142
South Atlantic-Gulf-----	4,341	6,584	8,842	10,679
Ohio-----	2,967	4,490	5,988	8,147
Tennessee-----	587	945	1,266	1,724
Great Lakes-----	2,674	3,357	4,401	6,003
Upper Mississippi-----	6,557	9,271	12,537	16,033
Souris-Red-----	500	874	1,084	1,377
Missouri-----	5,358	8,054	10,816	14,741
Arkansas-White-Red-----	2,711	4,160	5,736	7,461
Lower Mississippi-----	1,402	2,077	2,680	3,545
Rio Grande-----	564	548	726	984
Texas-Gulf-----	1,842	2,852	3,621	4,870
Upper Colorado-----	123	186	249	358
Lower Colorado-----	454	829	1,094	1,477
Great Basin-----	211	328	443	605
California-----	3,330	5,018	6,695	9,316
Columbia-North Pacific-----	1,604	2,563	3,411	4,615
United States-----	38,323	55,951	74,767	99,076

1/ Projected income computed from normalized prices.

Table 10.--Income (payrolls) in the limber and wood products industries, 1962, with preliminary projections to 1980, 2000 and 2020, Water Resource Regions ^{1/}

Water Resource Region	1962	Projections		
		1980	2000	2020
	1,000 dollars	1,000 dollars	1,000 dollars	1,000 dollars
North Atlantic-----	258,280	341,100	390,400	438,800
South Atlantic-Gulf-----	296,100	335,900	573,400	682,100
Ohio ^{2/} -----	142,500	196,900	330,100	406,200
Great Lakes-----	177,830	246,000	277,300	308,100
Upper Mississippi-----	103,910	170,200	268,000	413,700
Souris-Red-----	2,260	4,000	7,900	11,700
Missouri-----	32,110	40,000	46,900	53,600
Arkansas-White-Red-----	112,280	137,000	187,100	239,700
Lower Mississippi-----	55,690	73,800	97,500	105,900
Rio Grande-----	4,080	10,100	15,700	16,100
Texas-Gulf-----	50,060	70,400	125,000	131,400
Upper Colorado-----	7,300	19,800	37,100	36,900
Lower Colorado-----	12,780	22,800	26,500	25,900
Great Basin-----	1,970	2,800	3,600	2,700
California-----	265,470	265,500	221,400	220,900
Columbia-North Pacific-----	685,550	870,300	844,800	837,100
	2,208,170	2,806,600	3,452,700	3,930,800

^{1/} Lumber and wood products industries include logging camps engaged in cutting timber, sawmills, veneer mills, lath mills, shingle mills, cooperage-stock mills, planing mills, and plywood mills engaged in producing lumber, veneer and plywood, and wood basic materials; and establishments engaged in manufacturing finished articles made entirely or mainly of wood (Major group 24, as defined in the Standard Industrial Classification Manual). Projections of payrolls were based on the employment figures shown in Table 14, and the assumption that average wages and salaries per employee would increase at the same rate as productivity.

^{2/} Excludes the Tennessee Valley.

Table 11.--Income (payrolls) in the pulp, paper, and allied products industries, 1962, with preliminary projections to 1980, 2000, and 2020, Water Resource Regions 1/

Water Resource Region	1962	Projections		
		1980	2000	2020
	1,000 dollars	1,000 dollars	1,000 dollars	1,000 dollars
North Atlantic-----	1,087,300	1,880,900	2,742,700	3,090,800
South Atlantic-Gulf-----	402,300	601,900	1,063,900	1,125,700
Ohio <u>2/</u> -----	293,500	537,800	1,048,000	1,540,700
Great Lakes-----	745,060	1,174,600	1,689,800	1,882,500
Upper Mississippi-----	380,610	727,400	1,000,900	1,163,000
Souris-Red-----	8,740	10,500	16,400	16,500
Missouri-----	42,500	142,400	370,100	457,300
Arkansas-White-Red-----	79,700	177,900	311,500	340,400
Lower Mississippi-----	75,090	240,700	449,900	455,000
Rio Grande-----	--	5,000	9,700	15,900
Texas-Gulf-----	64,970	159,000	284,100	278,800
Upper Colorado-----	--	12,000	24,300	37,100
Lower Colorado-----	4,010	9,000	17,800	29,100
Great Basin-----	--	--	--	--
California-----	172,660	663,800	1,048,400	1,113,100
Columbia-North Pacific-----	171,730	344,900	445,400	480,200
	3,528,170	6,687,800	10,522,900	12,026,100

1/ Pulp, paper and allied products industries include establishments manufacturing pulp primarily from wood and converting this pulp into paper or board; and the manufacture of paper and paperboard into converted products such as coated paper, paper bags, paperboard boxes, and envelopes (Major group 26, as defined in the Standard Industrial Classification Manual). Projections of payrolls were based on the employment figures shown in Table 15, and the assumption that average wages and salaries per employee would increase at the same rate as productivity.

2/ Excludes the Tennessee Valley.

Table 12.--Income (payrolls) in forest management, 1962, with preliminary projections to 1980, 2000 and 2020, Water Resource Regions

Water Resource Region	1962	Projections		
		1980	2000	2020
	1,000	1,000	1,000	1,000
	dollars	dollars	dollars	dollars
North Atlantic-----	59,500	132,500	323,100	661,300
South Atlantic-Gulf-----	74,500	166,000	403,500	830,800
Ohio 2/-----	40,000	88,900	217,100	443,700
Great Lakes-----	21,000	46,700	113,700	232,300
Upper Mississippi-----	28,000	62,300	152,000	311,800
Souris-Red-----	4,500	10,100	24,300	50,200
Missouri-----	25,500	56,900	137,900	284,600
Arkansas-White-Red-----	23,000	51,400	125,100	255,300
Lower Mississippi-----	15,000	33,500	81,700	167,400
Rio Grande-----	3,500	7,800	19,200	39,800
Texas-Gulf-----	9,000	20,200	48,500	100,500
Upper Colorado-----	4,500	10,100	24,300	50,200
Lower Colorado-----	5,500	12,400	29,300	62,800
Great Basin-----	2,500	4,700	8,900	16,700
California-----	50,500	112,200	273,300	563,000
Columbia-North Pacific-----	87,500	194,900	475,000	975,300
	454,000	1,010,600	2,456,900	5,045,700

1/ Forest management includes protection and management of forests for the production of timber and related products.

2/ Excludes the Tennessee Valley.

for the United States showed movements very similar to those reflected by use of normalized prices. In 1980 and 2000 projected prices yielded total income only slightly below the level based on normalized series. However, in 2020 income computed from both series of prices are essentially equal. When realized gross farm income is computed for the Water Resource Regions using the two alternative sets of prices, the projected output price series yields income levels slightly below the normalized series in all but three Regions - Lower Mississippi, Missouri, and Upper Colorado.

The number of workers required to produce the projected output presented in this report is projected to decline throughout the projection period. Changes in the structure of agriculture are inherent in these projections. Farms are expected to continue downward in numbers but grow in size as smaller farms are consolidated into larger commercial family farms. This will have the combined effect of reducing the number of farm workers as well as lengthening the average work week of the employed as the partly-employed farmers move out of agriculture. The productivity of farm workers will continue to increase. Total farm output per unit of labor is projected to double between now and 1980 with lesser increases projected beyond that date. Productivity of employees engaged in lumber, wood products and associated industries is assumed to increase between 2 and 2.5 percent per year.

Projections of labor requirements are related to projected production levels. Productivity per man hour applied to projected production by major commodity groups yields projected total man hours of labor. These were converted to numbers of workers by projecting the average hours worked per year per man.

The projected number of farm workers shown in (Table 13) is based upon the USDA series of numbers of farm workers. These are estimates of the annual average numbers of family and hired workers engaged in agricultural production. The individuals may, and in fact many do hold jobs in other industries.

The combined impact of the projections contained in this report upon agriculturally related industries - those industries that serve and are served by agriculture - is difficult to evaluate. Existing data are inadequate to explore fully the inter-industry relationships between agriculture and other sectors of the economy. These relationships will be analyzed in more detail in the revised projections. However, some of the existing data at the national level are of interest.

In 1958 the livestock and livestock products sector of United States agriculture acquired about one fourth of the value of its inputs from other agricultural products sectors. Much of this input was in the form of purchases of feed crops directly from other farmers. About a tenth of the inputs to the livestock products sector came from the food and kindred products industries. Purchases from these industries were largely feed concentrates of various types. In the same year about three-fifths of the total value of output from the livestock and livestock products sector was used as inputs by the food and kindred products sector.

In 1980, the relative value of purchases from the food and kindred products sectors by livestock producers may increase by as much as a fifth as uses of high protein feeds increases.

Table 13.--Number of farm workers, 1959-61 average with preliminary projections to 1980, 2000, and 2020, United States and Water Resource Regions ^{1/}

Water Resource Regions	1959-61	Projections		
		1980	2000	2020
	1,000 Persons	1,000 Persons	1,000 Persons	1,000 Persons
North Atlantic-----	576	258	239	192
South Atlantic-Gulf-----	1,113	475	439	351
Ohio-----	817	398	368	295
Tennessee Valley-----	231	115	106	85
Great Lakes-----	535	287	265	213
Upper Mississippi-----	852	453	418	336
Souris-Red-----	94	57	53	43
Missouri-----	717	413	381	306
Arkansas-White-Red-----	482	298	275	221
Lower Mississippi-----	462	258	239	192
Rio Grande-----	78	32	30	24
Texas-Gulf-----	361	208	192	154
Upper Colorado-----	26	18	17	13
Lower Colorado-----	50	25	23	19
Great Basin-----	41	22	20	16
California-----	374	151	139	112
Columbia-North Pacific-----	297	122	113	91
United States-----	7,106	3,590	3,317	2,663

^{1/} Average annual number of farm workers, family and hired.

Table 14.--Employment in the lumber and wood products industries, 1962, with preliminary projections to 1980, 2000 and 2020, Water Resource Regions 1/

Water Resource Region	1962	Projections		
		1980	2000	2020
	Number	Number	Number	Number
North Atlantic-----	70,690	65,400	50,300	38,100
South Atlantic-Gulf-----	111,050	88,200	101,300	81,150
Ohio <u>2/</u> -----	39,560	38,300	43,200	35,800
Great Lakes-----	43,350	42,000	31,800	23,800
Upper Mississippi-----	19,810	22,700	24,100	25,200
Souris-Red-----	750	900	1,200	1,200
Missouri-----	8,820	7,600	6,100	4,700
Arkansas-White-Red-----	34,750	29,700	27,300	23,560
Lower Mississippi-----	19,270	17,900	15,900	11,600
Rio Grande-----	1,110	2,000	2,000	1,400
Texas-Gulf-----	15,910	15,700	18,700	13,200
Upper Colorado-----	1,950	3,700	4,700	3,100
Lower Colorado-----	2,860	3,700	2,900	1,900
Great Basin-----	400	400	400	200
California-----	48,610	34,000	19,100	12,800
Columbia-North Pacific-----	125,420	109,600	89,700	78,500
	544,310	481,800	438,700	356,210

1/ Lumber and wood products industries include logging camps engaged in cutting timber, sawmills, veneer mills, lath mills, shingle mills, cooperage-stock mills, planing mills, and plywood mills engaged in producing lumber, veneer and plywood, and wood basic materials; and establishments engaged in manufacturing finished articles made entirely or mainly of wood (Major group 24 as defined in the Standard Industrial Classification Manual). Projections of employment were based on the timber input figures shown in Appendix table 5, and the assumption that productivity, i.e., the volume of wood processed by each employee, would continue to increase at historical rates. Implicit in this rate is an allowance for an increase in secondary manufacturing activities such as the further manufacture of lumber into millwork, flooring, and prefabricated buildings.

2/ Excludes the Tennessee Valley.

Table 15.--Employment in the pulp, paper, and allied products industries, 1962, with preliminary projections to 1980, 2000 and 2020, Water Resource Regions 1/

Water Resource Region	1962	Projections		
		1980	2000	2020
	<u>Number</u>	<u>Number</u>	<u>Number</u>	<u>Number</u>
North Atlantic-----	192,580	213,500	190,000	130,700
South Atlantic-Gulf-----	69,900	67,100	72,400	46,700
Ohio <u>2/</u> -----	49,350	58,000	69,000	61,900
Great Lakes-----	128,460	129,800	114,000	77,500
Upper Mississippi-----	43,520	53,300	44,800	31,800
Souris-Red-----	2,140	1,600	1,500	1,000
Missouri-----	8,140	17,700	27,500	20,900
Arkansas-White-Red-----	13,870	19,800	21,200	14,100
Lower Mississippi-----	12,980	26,700	30,400	18,800
Rio Grande-----	--	500	600	600
Texas-Gulf-----	11,920	18,700	20,400	12,200
Upper Colorado-----	--	1,200	1,500	1,400
Lower Colorado-----	620	900	1,100	1,100
Great Basin-----	--	--	--	--
California-----	28,270	69,700	67,200	43,500
Columbia-North Pacific-----	27,100	36,400	36,100	36,100
	588,850	714,900	697,700	498,300

1/ Pulp, paper and allied products industries include establishments manufacturing pulp primarily from wood and converting this pulp into paper or board; and the manufacture of paper and paperboard into converted products such as coated paper, paper bags, paperboard boxes, and envelopes (Major group 26, as defined in the Standard Industrial Classification Manual). Projections of employment were based on the pulpwood input figures shown in Appendix table 6, and the assumption that productivity, i.e., the volume of wood processed by each employee, would continue to increase at historical rates. Implicit in this rate is an allowance for an increase in secondary manufacturing activities such as the further manufacture of paper and board into bags, boxes, and other similar products.

2/ Excludes the Tennessee Valley.

Table 16.--Employment in forest management, 1962, with preliminary projections to 1980, 2000 and 2020, Water Resource Regions 1/

Water Resource Region	1962	Projections		
		1980	2000	2020
	Number	Number	Number	Number
North Atlantic-----	11,900	17,000	25,300	31,600
South Atlantic-Gulf-----	14,900	21,300	31,600	39,700
Ohio <u>2/</u> -----	8,000	11,400	17,000	21,200
Great Lakes-----	4,200	6,000	8,900	11,100
Upper Mississippi-----	5,600	8,000	11,900	14,900
Souris-Red-----	900	1,000	1,100	1,200
Missouri-----	5,100	7,300	10,800	13,600
Arkansas-White-Red-----	4,600	6,500	9,800	12,200
Lower Mississippi-----	3,000	4,300	6,400	8,000
Rio Grande-----	700	1,000	1,500	1,900
Texas-Gulf-----	1,800	2,600	3,800	4,800
Upper Colorado-----	900	1,300	1,900	2,400
Lower Colorado-----	1,100	1,600	2,300	3,000
Great Basin-----	500	600	700	800
California-----	10,100	14,400	21,400	26,900
Columbia-North Pacific-----	17,500	25,000	37,200	46,600
	90,800	129,300	191,600	239,900

1/ Forest management includes protection and management of forests for the production of timber and related products.

2/ Excludes the Tennessee Valley.

The other agricultural products sectors, primarily crop production, obtain inputs from more diverse sources than the livestock and livestock products sectors. About four percent of the value of inputs to the crop production sectors in 1958 represented purchases of such agricultural services as cotton ginning and contract harvesting of various types. Nearly five percent of requirements for crop production included purchases from the chemical industries - largely commercial fertilizers. Such purchases are expected to increase faster than the value of gross output in the future, thus by 1980, nearly a tenth of the value of crop production inputs may be represented by purchases from the chemical industries.

Another relatively important supplier of inputs to the other agricultural products sector is petroleum and related products industries that supply gasoline and oil. In 1958, purchases from these industries represented about four percent of the value of direct requirements of the crop producers. By 1980, use of petroleum products per unit of crop input is projected to decline from current levels. This will occur as tractor sizes increase, as self-propelled units increase in number, and as more intensive use is made of tractors and machinery on larger size farms.

The primary users of the output from the other agricultural products sector are: livestock and livestock products, food and kindred products, tobacco manufacturers, and the textile industries. In 1958, these sectors purchased nearly three-fourths of the total value of output from the other agricultural products sectors.

A P P E N D I X

Appendix Table 1.--Production of Agricultural Commodities: United States, 1959-61 average, with projections to 1980, 2000, and 2020 1/

Commodity	Unit	1959-61	Projections		
			1980	2000	2020
-----Thousands-----					
Feed grains (corn equiv.):	Tons	145,128	199,683	259,571	339,956
Corn	Tons	106,010	146,640	193,813	258,222
Oats	Tons	17,167	18,471	17,176	12,662
Barley	Tons	9,995	12,624	12,866	12,035
Sorghum	Tons	15,445	26,377	40,759	62,640
Food crops:					
Wheat	Bu.	1,237,700	1,889,600	2,192,200	2,618,600
Rye	Bu.	27,868	40,732	53,893	72,518
Rice (rough)	Cwt.	54,145	84,130	96,470	113,850
Peanuts (farm stock)	Lbs.	1,705,500	2,519,000	3,455,000	4,774,000
Sugar (raw)	Tons	3,290	7,619	12,497	19,357
Dry beans	Cwt.	19,048	23,450	30,980	41,580
Dry peas	Cwt.	3,927	5,300	6,100	7,220
Potatoes	Cwt.	265,609	328,876	450,136	627,396
Sweet potatoes	Cwt.	16,508	18,052	24,882	34,492
Fruits and Vegetables:					
Citrus fruits	Tons	8,028	11,479	15,446	21,026
Noncitrus fruits	Tons	9,952	13,123	18,887	26,995
Vegetables	Cwt.	403,902	642,235	881,055	1,217,135
Tree nuts (shelled)	Lbs.	170,000	154,000	303,000	513,000
Fiber and Misc. crops:					
Cotton	Lbs.	7,191,300	8,429,000	10,335,000	13,016,000
Flaxseed	Bu.	24,605	22,518	29,161	38,500
Soybeans	Bu.	589,257	1,305,467	1,640,933	2,116,367
Tobacco	Lbs.	1,934,200	2,225,000	2,932,000	3,926,000
Livestock and products:					
Beef and veal	Lbs.	28,898,500	47,451,000	66,580,000	93,537,000
Pork	Lbs.	20,220,400	27,056,000	37,352,000	51,830,000
Lamb and mutton	Lbs.	1,683,000	1,700,000	2,378,000	3,331,000
Farm chickens	Lbs.	1,251,700	1,456,000	2,005,000	2,779,000
Turkeys	Lbs.	1,600,900	3,559,000	4,888,000	6,760,000
Eggs	No.	62,302,000	75,528,000	104,065,000	144,289,000
Milk	Lbs.	123,460,700	145,089,000	198,719,000	274,269,000
Broilers	Lbs.	6,207,100	10,702,000	14,608,000	20,111,000

1/ Exclude Alaska and Hawaii

Appendix table 2-1.--Preliminary projections of production of major agricultural product groups, 1980, 2000 and 2020, North Atlantic Water Resource Region

Commodity group ^{2/}	Projections ^{1/}		
	1980	2000	2020
	Index	Index	Index
Feed crops-----	113	126	137
Feed grains-----	115	XXX	XXX
Hay and forage-----	111	XXX	XXX
Food crops-----	133	182	253
Food grains-----	104	XXX	XXX
Vegetables, fruits, sugar---	144	XXX	XXX
Other food crops-----	122	XXX	XXX
Oil and fiber crops-----	139	180	236
Oil crops-----	184	XXX	XXX
Cotton-----	-	XXX	XXX
Tobacco-----	102	XXX	XXX
Livestock and products-----	120	165	228
Meat animals-----	126	XXX	XXX
Milk-----	124	XXX	XXX
Poultry products-----	117	XXX	XXX

^{1/} Projections are indexes of physical volume, 1959-61 = 100.

^{2/} Items included in each commodity group are as follows:

Feed grains: Corn, oats, barley, sorghum grain;

Hay and forage: Hay silage, straw stover, pulp;

Food grains: Wheat, rye, rice;

Vegetables, fruits, sugar: Vegetables, citrus and non-citrus fruits, nuts, sugar cane, sugar beets;

Other food crops: Potatoes, sweet potatoes, dry beans, dry peas;

Oil crops: Soybeans, peanuts, flaxseed;

Meat animals: Beef, veal, pork, lamb, mutton, and;

Poultry products: Farm chickens, turkeys, eggs, broilers.

Appendix table 2-2.--Preliminary projections of production of major agricultural product groups, 1980, 2000 and 2020, South Atlantic Water Resource Region

Commodity group ^{2/}	Projections ^{1/}		
	1980	2000	2020
	<u>Index</u>	<u>Index</u>	<u>Index</u>
Feed crops-----	158	204	280
Feed grains-----	132	XXX	XXX
Hay and forage-----	243	XXX	XXX
Food crops-----	151	208	288
Food grains-----	99	XXX	XXX
Vegetables, fruits, sugar---	161	XXX	XXX
Other food crops-----	81	XXX	XXX
Oil and fiber crops-----	130	168	223
Oil crops-----	200	XXX	XXX
Cotton-----	125	XXX	XXX
Tobacco-----	115	XXX	XXX
Livestock and products-----	165	228	316
Meat animals-----	177	XXX	XXX
Milk-----	116	XXX	XXX
Poultry products-----	188	XXX	XXX

^{1/} Projections are indexes of physical volume, 1959-61 = 100.

^{2/} Items included in each commodity group are as follows:

Feed grains: Corn, oats, barley, sorghum grain;

Hay and forage: Hay silage, straw stover, pulp;

Food grains: Wheat, rye, rice;

Vegetables, fruits, sugar: Vegetables, citrus and non-citrus fruits, nuts, sugar cane, sugar beets;

Other food crops: Potatoes, sweet potatoes, dry beans, dry peas;

Oil crops: Soybeans, peanuts, flaxseed;

Meat animals: Beef, veal, pork, lamb, mutton, and;

Poultry products: Farm chickens, turkeys, eggs, broilers.

Appendix table 2-3.--Preliminary projections of production of major agricultural product groups, 1980, 2000 and 2020, Ohio Basin Water Resource Region

Commodity group ^{2/}	Projections ^{1/}		
	1980	2000	2020
	<u>Index</u>	<u>Index</u>	<u>Index</u>
Feed crops-----	141	180	231
Feed grains-----	145	XXX	XXX
Hay and forage-----	128	XXX	XXX
Food crops-----	165	193	226
Food grains-----	166	XXX	XXX
Vegetables, fruits, sugar---	148	XXX	XXX
Other food crops-----	123	XXX	XXX
Oil and fiber crops-----	173	222	291
Oil crops-----	235	XXX	XXX
Cotton-----	-	XXX	XXX
Tobacco-----	123	XXX	XXX
Livestock and products-----	131	181	252
Meat animals-----	139	XXX	XXX
Milk-----	119	XXX	XXX
Poultry products-----	116	XXX	XXX

^{1/} Projections are indexes of physical volume, 1959-61 = 100.

^{2/} Items included in each commodity group are as follows:

Feed grains: Corn, oats, barley, sorghum grain;

Hay and forage: Hay silage, straw stover, pulp;

Food grains: Wheat, rye, rice;

Vegetables, fruits, sugar: Vegetables, citrus and non-citrus fruits, nuts, sugar cane, sugar beets;

Other food crops: Potatoes, sweet potatoes, dry beans, dry peas;

Oil crops: Soybeans, peanuts, flaxseed;

Meat animals: Beef, veal, pork, lamb, mutton, and;

Poultry products: Farm chickens, turkeys, eggs, broilers.

Appendix table 2-4.--Preliminary projections of production of major agricultural product groups, 1980, 2000 and 2020, Tennessee Valley Water Resource Region

Commodity group ^{2/}	Projections ^{1/}		
	1980	2000	2020
	<u>Index</u>	<u>Index</u>	<u>Index</u>
Feed crops-----	146	191	244
Feed grains-----	140	XXX	XXX
Hay and forage-----	156	XXX	XXX
Food crops-----	132	174	234
Food grains-----	153	XXX	XXX
Vegetables, fruits, sugar---	152	XXX	XXX
Other food crops-----	66	XXX	XXX
Oil and fiber crops-----	121	154	200
Oil crops-----	618	XXX	XXX
Cotton-----	125	XXX	XXX
Tobacco-----	102	XXX	XXX
Livestock and products-----	162	224	311
Meat animals-----	176	XXX	XXX
Milk-----	110	XXX	XXX
Poultry products-----	177	XXX	XXX

^{1/} Projections are indexes of physical volume, 1959-61 = 100.

^{2/} Items included in each commodity group are as follows:

Feed grains: Corn, oats, barley, sorghum grain;

Hay and forage: Hay silage, straw stover, pulp;

Food grains: Wheat, rye, rice;

Vegetables, fruits, sugar: Vegetables, citrus and non-citrus fruits, nuts, sugar cane, sugar beets;

Other food crops: Potatoes, sweet potatoes, dry beans, dry peas;

Oil crops: Soybeans, peanuts, flaxseed;

Meat animals: Beef, veal, pork, lamb, mutton, and;

Poultry products: Farm chickens, turkeys, eggs, broilers.

Appendix table 2-5.--Preliminary projections of production of major agricultural product groups, 1980, 2000 and 2020, Great Lakes Water Resource Region

Commodity group ^{2/}	Projections ^{1/}		
	1980	2000	2020
	<u>Index</u>	<u>Index</u>	<u>Index</u>
Feed crops-----	131	156	198
Feed grains-----	123	XXX	XXX
Hay and forage-----	174	XXX	XXX
Food crops-----	139	186	252
Food grains-----	129	XXX	XXX
Vegetables, fruits, sugar---	148	XXX	XXX
Other food crops-----	129	XXX	XXX
Oil and fiber crops-----	214	269	348
Oil crops-----	214	XXX	XXX
Cotton-----	-	XXX	XXX
Tobacco-----	-	XXX	XXX
Livestock and products-----	125	173	240
Meat animals-----	149	XXX	XXX
Milk-----	115	XXX	XXX
Poultry products-----	112	XXX	XXX

1/ Projections are indexes of physical volume, 1959-61 = 100.

2/ Items included in each commodity group are as follows:

Feed grains: Corn, oats, barley, sorghum grain;

Hay and forage: Hay silage, straw stover, pulp;

Food grains: Wheat, rye, rice;

Vegetables, fruits, sugar: Vegetables, citrus and non-citrus fruits, nuts, sugar cane, sugar beets;

Other food crops: Potatoes, sweet potatoes, dry beans, dry peas;

Oil crops: Soybeans, peanuts, flaxseed;

Meat animals: Beef, veal, pork, lamb, mutton, and;

Poultry products: Farm chickens, turkeys, eggs, broilers.

Appendix table 2-6.--Preliminary projections of production of major agricultural product groups, 1980, 2000 and 2020, Upper Mississippi Water Resource Region

Commodity group ^{2/}	Projections ^{1/}		
	1980	2000	2020
	<u>Index</u>	<u>Index</u>	<u>Index</u>
Feed crops-----	154	205	275
Feed grains-----	146	XXX	XXX
Hay and forage-----	179	XXX	XXX
Food crops-----	116	150	198
Food grains-----	101	XXX	XXX
Vegetables, fruits, sugar---	138	XXX	XXX
Other food crops-----	105	XXX	XXX
Oil and fiber crops-----	195	246	317
Oil crops-----	198	XXX	XXX
Cotton-----	-	XXX	XXX
Tobacco-----	82	XXX	XXX
Livestock and products-----	142	196	273
Meat animals-----	153	XXX	XXX
Milk-----	123	XXX	XXX
Poultry products-----	121	XXX	XXX

^{1/} Projections are indexes of physical volume, 1959-61 = 100.

^{2/} Items included in each commodity group are as follows:

Feed grains: Corn, oats, barley, sorghum grain;

Hay and forage: Hay silage, straw stover, pulp;

Food grains: Wheat, rye, rice;

Vegetables, fruits, sugar: Vegetables, citrus and non-citrus fruits, nuts, sugar cane, sugar beets;

Other food crops: Potatoes, sweet potatoes, dry beans, dry peas;

Oil crops: Soybeans, peanuts, flaxseed;

Meat animals: Beef, veal, pork, lamb, mutton, and;

Poultry products: Farm chickens, turkeys, eggs, broilers.

Appendix table 2-7.--Preliminary projections of production of major agricultural product groups, 1980, 2000 and 2020, Souris-Red Water Resource Region

Commodity group ^{2/}	Projections ^{1/}		
	1980	2000	2020
	Index	Index	Index
Feed crops-----	121	130	132
Feed grains-----	132	XXX	XXX
Hay and forage-----	99	XXX	XXX
Food crops-----	197	240	299
Food grains-----	212	XXX	XXX
Vegetables, fruits, sugar---	251	XXX	XXX
Other food crops-----	118	XXX	XXX
Oil and fiber crops-----	216	267	356
Oil crops-----	216	XXX	XXX
Cotton-----	-	XXX	XXX
Tobacco-----	-	XXX	XXX
Livestock and products-----	111	153	214
Meat animals-----	106	XXX	XXX
Milk-----	110	XXX	XXX
Poultry products-----	136	XXX	XXX

^{1/} Projections are indexes of physical volume, 1959-61 = 100.

^{2/} Items included in each commodity group are as follows:

Feed grains: Corn, oats, barley, sorghum grain;

Hay and forage: Hay silage, straw stover, pulp;

Food grains: Wheat, rye, rice;

Vegetables, fruits, sugar: Vegetables, citrus and non-citrus fruits, nuts, sugar cane, sugar beets;

Other food crops: Potatoes, sweet potatoes, dry beans, dry peas;

Oil crops: Soybeans, peanuts, flaxseed;

Meat animals: Beef, veal, pork, lamb, mutton, and;

Poultry products: Farm chickens, turkeys, eggs, broilers.

Appendix table 2-8.--Preliminary projections of production of major agricultural product groups, 1980, 2000 and 2020, Missouri Water Resource Region

Commodity group ^{2/}	Projections ^{1/}		
	1980	2000	2020
	<u>Index</u>	<u>Index</u>	<u>Index</u>
Feed crops-----	139	179	235
Feed grains-----	147	XXX	XXX
Hay and forage-----	120	XXX	XXX
Food crops-----	158	192	240
Food grains-----	157	XXX	XXX
Vegetables, fruits, sugar---	191	XXX	XXX
Other food crops-----	109	XXX	XXX
Oil and fiber crops-----	207	261	338
Oil crops-----	210	XXX	XXX
Cotton-----	-	XXX	XXX
Tobacco-----	84	XXX	XXX
Livestock and products-----	142	198	272
Meat animals-----	151	XXX	XXX
Milk-----	102	XXX	XXX
Poultry products-----	97	XXX	XXX

^{1/} Projections are indexes of physical volume, 1959-61 = 100.

^{2/} Items included in each commodity group are as follows:

Feed grains: Corn, oats, barley, sorghum grain;

Hay and forage: Hay silage, straw stover, pulp;

Food grains: Wheat, rye, rice;

Vegetables, fruits, sugar: Vegetables, citrus and non-citrus fruits, nuts, sugar cane, sugar beets;

Other food crops: Potatoes, sweet potatoes, dry beans, dry peas;

Oil crops: Soybeans, peanuts, flaxseed;

Meat animals: Beef, veal, pork, lamb, mutton, and;

Poultry products: Farm chickens, turkeys, eggs, broilers.

Appendix table 2-9.--Preliminary projections of production of major agricultural product groups, 1980, 2000 and 2020, Arkansas-White-Red Water Resource Region

Commodity group ^{2/}	Projections ^{1/}		
	1980	2000	2020
	<u>Index</u>	<u>Index</u>	<u>Index</u>
Feed crops-----	140	233	269
Feed grains-----	140	XXX	XXX
Hay and forage-----	140	XXX	XXX
Food crops-----	140	165	201
Food grains-----	140	XXX	XXX
Vegetables, fruits, sugar----	148	XXX	XXX
Other food crops-----	89	XXX	XXX
Oil and fiber crops-----	125	156	199
Oil crops-----	168	XXX	XXX
Cotton-----	109	XXX	XXX
Tobacco-----	-	XXX	XXX
Livestock and products-----	153	212	296
Meat animals-----	155	XXX	XXX
Milk-----	97	XXX	XXX
Poultry products-----	205	XXX	XXX

^{1/} Projections are indexes of physical volume, 1959-61 = 100.

^{2/} Items included in each commodity group are as follows:

Feed grains: Corn, oats, barley, sorghum grain;

Hay and forage: Hay silage, straw stover, pulp;

Food grains: Wheat, rye, rice;

Vegetables, fruits, sugar: Vegetables, citrus and non-citrus fruits, nuts, sugar cane, sugar beets;

Other food crops: Potatoes, sweet potatoes, dry beans, dry peas;

Oil crops: Soybeans, peanuts, flaxseed;

Meat animals: Beef, veal, pork, lamb, mutton, and;

Poultry products: Farm chickens, turkeys, eggs, broilers.

Appendix table 2-10.--Preliminary projections of production of major agricultural product groups, 1980, 2000 and 2020, Lower Mississippi Water Resource Region

Commodity group <u>2/</u>	Projections <u>1/</u>		
	1980	2000	2020
	<u>Index</u>	<u>Index</u>	<u>Index</u>
Feed crops-----	95	124	161
Feed grains-----	75	XXX	XXX
Hay and forage-----	164	XXX	XXX
Food crops-----	164	224	309
Food grains-----	149	XXX	XXX
Vegetables, fruits, sugar---	193	XXX	XXX
Other food crops-----	106	XXX	XXX
Oil and fiber crops-----	142	175	223
Oil crops-----	230	XXX	XXX
Cotton-----	110	XXX	XXX
Tobacco-----	127	XXX	XXX
Livestock and products-----	149	207	288
Meat animals-----	160	XXX	XXX
Milk-----	95	XXX	XXX
Poultry products-----	186	XXX	XXX

1/ Projections are indexes of physical volume, 1959-61 = 100.

2/ Items included in each commodity group are as follows:

Feed grains: Corn oats, barley, sorghum grain;

Hay and forage: Hay, silage straw, stover, pulp;

Food grains: Wheat, rye, rice;

Vegetables, fruits, sugar: Vegetables, citrus and non-citrus fruits, nuts, sugar cane, sugar beets;

Other food crops: Potatoes, sweet potatoes, dry beans, dry peas;

Oil crops: Soybeans, peanuts, flaxseed;

Meat animals: Beef, veal, pork, lamb, mutton, and;

Poultry products: Farm chickens, turkeys, eggs, broilers.

-Appendix table 2-11.--Preliminary projections of production of major agricultural product groups, 1980, 2000 and 2020, Rio Grande Water Resource Region

Commodity group 2/	Projections 1/		
	1980	2000	2020
	<u>Index</u>	<u>Index</u>	<u>Index</u>
Feed crops-----	148	200	275
Feed grains-----	158	XXX	XXX
Hay and forage-----	143	XXX	XXX
Food crops-----	121	166	229
Food grains-----	-	XXX	XXX
Vegetables, fruits, sugar---	122	XXX	XXX
Other food crops-----	111	XXX	XXX
Oil and fiber crops-----	113	138	174
Oil crops-----	-	XXX	XXX
Cotton-----	113	XXX	XXX
Tobacco-----	-	XXX	XXX
Livestock and products-----	139	194	272
Meat animals-----	147	XXX	XXX
Milk-----	73	XXX	XXX
Poultry products-----	190	XXX	XXX

1/ Projections are indexes of physical volume, 1959-61 = 100.

2/ Items included in each commodity group are as follows:

Feed grains: Corn oats, barley, sorghum grain;

Hay and forage: Hay, silage straw, stover, pulp;

Food grains: Wheat, rye, rice;

Vegetables, fruits, sugar: Vegetables, citrus and ono-citrus fruits, nuts, sugar cane, sugar beets;

Other food crops: Potatoes, sweet potatoes, dry beans, dry peas;

Oil crops: Soybeans, peanuts, flaxseed;

Meat animals: Beef, veal, pork, lamb, mutton, and;

Poultry products: Farm chickens, turkeys, eggs, broilers.

-Appendix table 2-12.--Preliminary projections of production of major agricultural product groups, 1980, 2000 and 2020, Texas Gulf Water Resource Region

Commodity group <u>2/</u>	Projections <u>1/</u>		
	1980	2000	2020
	<u>Index</u>	<u>Index</u>	<u>Index</u>
Feed crops-----	146	205	305
Feed grains-----	122	XXX	XXX
Hay and forage-----	279	XXX	XXX
Food crops-----	142	173	217
Food grains-----	144	XXX	XXX
Vegetables, fruits, sugar---	145	XXX	XXX
Other food crops-----	91	XXX	XXX
Oil and fiber crops-----	107	132	167
Oil crops-----	118	XXX	XXX
Cotton-----	106	XXX	XXX
Tobacco-----	-	XXX	XXX
Livestock and products-----	147	205	286
Meat animals-----	152	XXX	XXX
Milk-----	94	XXX	XXX
Poultry products-----	186	XXX	XXX

1/ Projections are indexes of physical volume, 1959-61 = 100.

2/ Items included in each commodity group are as follows:

Feed grains: Corn oats, barley, sorghum grain;

Hay and forage: Hay, silage straw, stover, pulp;

Food grains: Wheat, rye, rice;

Vegetables, fruits, sugar: Vegetables, citrus and ono-citrus fruits, nuts, sugar cane, sugar beets;

Other food crops: Potatoes, sweet potatoes, dry beans, dry peas;

Oil crops: Soybeans, peanuts, flaxseed;

Meat animals: Beef, veal, pork, lamb, mutton, and;

Poultry products: Farm chickens, turkeys, eggs, broilers.

Appendix table 2-13.--Preliminary projections of production of major agricultural product groups, 1980, 2000 and 2020, Upper Colorado Water Resource Region

Commodity group ^{2/}	Projections ^{1/}		
	1980	2000	2020
	<u>Index</u>	<u>Index</u>	<u>Index</u>
Feed crops-----	85	105	125
Feed grains-----	125	XXX	XXX
Hay and forage-----	78	XXX	XXX
Food crops-----	151	206	285
Food grains-----	161	XXX	XXX
Vegetables, fruits, sugar---	153	XXX	XXX
Other food crops-----	131	XXX	XXX
Oil and fiber crops-----	-	-	-
Oil crops-----	-	XXX	XXX
Cotton-----	-	XXX	XXX
Tobacco-----	-	XXX	XXX
Livestock and products-----	137	210	295
Meat animals-----	150	XXX	XXX
Milk-----	102	XXX	XXX
Poultry products-----	69	XXX	XXX

^{1/} Projections are indexes of physical volume, 1959-61 = 100.

^{2/} Items included in each commodity group are as follows:

Feed grains: Corn oats, barley, sorghum grain;

Hay and forage: Hay, silage straw, stover, pulp;

Food grains: Wheat, rye, rice;

Vegetables, fruits, sugar: Vegetables, citrus and non-citrus fruits, nuts, sugar cane, sugar beets;

Other food crops: Potatoes, sweet potatoes, dry beans, dry peas;

Oil crops: Soybeans, peanuts, flaxseed;

Meat animals: Beef, veal, pork, lamb, mutton, and;

Poultry products: Farm chickens, turkeys, eggs, broilers.

Appendix table 2-14.--Preliminary projections of production of major agricultural product groups, 1980, 2000 and 2020, Lower Colorado Water Resource Region

Commodity group ^{2/}	Projections ^{1/}		
	1980	2000	2020
	<u>Index</u>	<u>Index</u>	<u>Index</u>
Feed crops-----	149	191	235
Feed grains-----	137	XXX	XXX
Hay and forage-----	155	XXX	XXX
Food crops-----	155	210	288
Food grains-----	143	XXX	XXX
Vegetables, fruits, sugar---	158	XXX	XXX
Other food crops-----	129	XXX	XXX
Oil and fiber crops-----	155	190	239
Oil crops-----	19	XXX	XXX
Cotton-----	155	XXX	XXX
Tobacco-----	-	XXX	XXX
Livestock and products-----	178	250	350
Meat animals-----	190	XXX	XXX
Milk-----	131	XXX	XXX
Poultry products-----	144	XXX	XXX

^{1/} Projections are indexes of physical volume, 1959-61 = 100.

^{2/} Items included in each commodity group are as follows:

Feed grains: Corn oats, barley, sorghum grain;

Hay and forage: Hay, silage straw, stover, pulp;

Food grains: Wheat, rye, rice;

Vegetables, fruits, sugar: Vegetables, citrus and non-citrus fruits, nuts, sugar cane, sugar beets;

Other food crops: Potatoes, sweet potatoes, dry beans, dry peas;

Oil crops: Soybeans, peanuts, flaxseed;

Meat animals: Beef, veal, pork, lamb, mutton, and;

Poultry products: Farm chickens, turkeys, eggs, broilers.

-Appendix table 2-15.--Preliminary projections of production of major agricultural product groups, 1980, 2000 and 2020, Great Basin Water Resource Region

Commodity group 2/	Projections 1/		
	1980	2000	2020
	<u>Index</u>	<u>Index</u>	<u>Index</u>
Feed crops-----	109	135	161
Feed grains-----	130	XXX	XXX
Hay and forage-----	105	XXX	XXX
Food crops-----	134	182	252
Food grains-----	137	XXX	XXX
Vegetables, fruits, sugar----	137	XXX	XXX
Other food crops-----	92	XXX	XXX
Oil and fiber crops-----	-	-	-
Oil crops-----	-	XXX	XXX
Cotton-----	-	XXX	XXX
Tobacco-----	-	XXX	XXX
Livestock and products-----	155	216	302
Meat animals-----	164	XXX	XXX
Milk-----	130	XXX	XXX
Poultry products-----	160	XXX	XXX

1/ Projections are indexes of physical volume, 1959-61 = 100.

2/ Items included in each commodity group are as follows:

Feed grains: Corn oats, barley, sorghum grain;

Hay and forage: Hay, silage straw, stover, pulp;

Food grains: Wheat, rye, rice;

Vegetables, fruits, sugar: Vegetables, citrus and non-citrus fruits, nuts, sugar cane, sugar beets;

Other food crops: Potatoes, sweet potatoes, dry beans, dry peas;

Oil crops: Soybeans, peanuts, flaxseed;

Meat animals: Beef, veal, pork, lamb, mutton, and;

Poultry products: Farm chickens, turkeys, eggs, broilers.

Appendix table 2-16.--Preliminary projections of production of major agricultural product groups, 1980, 2000 and 2020, California Water Resource Region

Commodity group <u>2/</u>	Projections <u>1/</u>		
	1980	2000	2020
	Index	Index	Index
Feed crops-----	169	211	257
Feed grains-----	132	XXX	XXX
Hay and forage-----	194	XXX	XXX
Food crops-----	147	204	285
Food grains-----	156	XXX	XXX
Vegetables, fruits, sugar---	149	XXX	XXX
Other food crops-----	115	XXX	XXX
Oil and fiber crops-----	133	163	205
Oil crops-----	19	XXX	XXX
Cotton-----	134	XXX	XXX
Tobacco-----	-	XXX	XXX
Livestock and products-----	168	234	326
Meat animals-----	176	XXX	XXX
Milk-----	131	XXX	XXX
Poultry products-----	191	XXX	XXX

1/ Projections are indexes of physical volume, 1959-61 = 100.

2/ Items included in each commodity group are as follows:

Feed grains: Corn oats, barley, sorghum grain;

Hay and forage: Hay, silage straw, stover, pulp;

Food grains: Wheat, rye, rice;

Vegetables, fruits, sugar: Vegetables, citrus and ono-citrus fruits, nuts, sugar cane, sugar beets;

Other food crops: Potatoes, sweet potatoes, dry beans, dry peas;

Oil crops: Soybeans, peanuts, flaxseed;

Meat animals: Beef, veal, pork, lamb, mutton, and;

Poultry products: Farm chickens, turkeys, eggs, broilers.

Appendix table 2-17.--Preliminary projections of production of major agricultural product groups, 1980, 2000 and 2020, Columbia-North Pacific Water Resource Region

Commodity group ^{2/}	Projections ^{1/}		
	1980	2000	2020
	<u>Index</u>	<u>Index</u>	<u>Index</u>
Feed crops-----	135	159	186
Feed grains-----	120	XXX	XXX
Hay and forage-----	144	XXX	XXX
Food crops-----	164	216	289
Food grains-----	180	XXX	XXX
Vegetables, fruits, sugar---	163	XXX	XXX
Other food crops-----	145	XXX	XXX
Oil and fiber crops-----	-	-	-
Oil crops-----	-	XXX	XXX
Cotton-----	-	XXX	XXX
Tobacco-----	-	XXX	XXX
Livestock and products-----	146	203	281
Meat animals-----	164	XXX	XXX
Milk-----	122	XXX	XXX
Poultry products-----	140	XXX	XXX

1/ Projections are indexes of physical volume, 1959-61 = 100.

2/ Items included in each commodity group are as follows:

Feed grains: Corn oats, barley, sorghum grain;

Hay and forage: Hay, silage straw, stover, pulp;

Food grains: Wheat, rye, rice;

Vegetables, fruits, sugar: Vegetables, citrus and non-citrus fruits, nuts, sugar cane, sugar beets;

Other food crops: Potatoes, sweet potatoes, dry beans, dry peas;

Oil crops: Soybeans, peanuts, flaxseed;

Meat animals: Beef, veal, pork, lamb, mutton, and;

Poultry products: Farm chickens, turkeys, eggs, broilers.

Appendix table 3-1 .--Acreages of major crops, 1959 with preliminary projections to 1980, 2000 and 2020, North Atlantic Water Resource Region

Land use ^{1/}	1959	Projections		
		1980	2000	2020
	1,000	1,000	1,000	1,000
	<u>Acres</u>	<u>Acres</u>	<u>Acres</u>	<u>Acres</u>
Feed crops-----	12,696	8,536	8,446	8,907
Grains-----	2,968	2,410	XXX	XXX
Roughage-----	9,728	6,126	XXX	XXX
Food crops-----	1,987	2,016	2,121	2,428
Grains-----	897	680	XXX	XXX
Vegetables, fruits, sugar---	753	1,015	XXX	XXX
Other food crops-----	337	321	XXX	XXX
Oil, fiber & misc. crops-----	694	1,405	1,377	1,491
Oil-----	632	1,329	XXX	XXX
Cotton-----	2	-	XXX	XXX
Tobacco & miscellaneous-----	60	76	XXX	XXX
Total cropland harvested and used for pasture ^{2/} -----	15,377	11,957	11,944	12,826

1/ Commodities included in each group are as follows: Feed grains--corn, grain sorghum, oats and barley; Roughages--hay, silage, forage and cropland pasture; Food grains--wheat, rye and rice; Vegetables fruits and sugar--Vegetables for fresh market and processing, citrus and noncitrus fruits, nuts sugar beets and sugar cane; Other food crops--potatoes, sweet potatoes, dry beans and dry peas; Oil crops--soybeans, peanuts and flaxseed.

2/ Total acreage of feed crops, food crops and oil, fiber and miscellaneous crops exceeds the acreage of total cropland harvested and used for pasture due to double cropping.

Appendix table 3-2 .--Acreages of major crops, 1959 with preliminary projections to 1980, 2000 and 2020, South Atlantic Water Resource Region

Land use ^{1/}	1959	Projections		
		1980	2000	2020
	1,000	1,000	1,000	1,000
	<u>Acres</u>	<u>Acres</u>	<u>Acres</u>	<u>Acres</u>
Feed crops-----	15,304	9,532	11,509	11,518
Grains-----	7,685	3,820	XXX	XXX
Roughage-----	7,619	5,712	XXX	XXX
Food crops-----	2,703	2,687	3,004	2,995
Grains-----	794	515	XXX	XXX
Vegetables, fruits, sugar---	1,777	2,101	XXX	XXX
Other food crops-----	132	71	XXX	XXX
Oil, fiber & misc. crops-----	6,249	7,097	7,228	7,915
Oil-----	2,002	3,419	XXX	XXX
Cotton-----	2,392	1,904	XXX	XXX
Tobacco & miscellaneous-----	1,855	1,774	XXX	XXX
Total cropland harvested and used for pasture ^{2/} -----	24,256	19,316	19,451	22,428

1/ Commodities included in each group are as follows: Feed grains--corn, grain sorghum, oats and barley; Roughages--hay, silage, forage and cropland pasture; Food grains--wheat, rye and rice; Vegetables fruits and sugar--Vegetables for fresh market and processing, citrus and noncitrus fruits, nuts sugar beets and sugar cane; Other food crops--potatoes, sweet potatoes, dry beans and dry peas; Oil crops--soybeans, peanuts and flaxseed.

2/ Total acreage of feed crops, food crops and oil, fiber and miscellaneous crops exceeds the acreage of total cropland harvested and used for pasture due to double cropping.

Appendix table 3-3 .--Acreages of major crops, 1959 with preliminary projections to 1980, 2000 and 2020, Ohio Water Resource Region

Land use ^{1/}	1959	Projections			
		1980	2000	2020	
	1,000	1,000	1,000	1,000	
	<u>Acres</u>	<u>Acres</u>	<u>Acres</u>	<u>Acres</u>	
Feed crops-----	27,626	19,244	18,922	20,163	
Grains-----	11,692	8,044	XXX	XXX	
Roughage-----	15,934	11,200	XXX	XXX	
Food crops-----	2,771	2,935	2,805	2,950	
Grains-----	2,517	2,739	XXX	XXX	
Vegetables, fruits, sugar---	221	159	XXX	XXX	
Other food crops-----	33	37	XXX	XXX	
Oil, fiber & misc. crops-----	4,380	8,144	7,440	7,641	
Oil-----	3,683	7,489	XXX	XXX	
Cotton-----	3	-	XXX	XXX	
Tobacco & miscellaneous-----	694	655	XXX	XXX	
Total cropland harvested and used for pasture ^{2/-} -----	34,777	30,323	29,167	30,754	

^{1/} Commodities included in each group are as follows: Feed grains--corn, grain sorghum, oats and barley; Roughages--hay, silage, forage and cropland pasture; Food grains--wheat, rye and rice; Vegetables, fruits and sugar--Vegetables for fresh market and processing, citrus and noncitrus fruits, nuts sugar beets and sugar cane; Other food crops--potatoes, sweet potatoes, dry beans and dry peas; Oil crops--soybeans, peanuts and flaxseed.

^{2/} Total acreage of feed crops, food crops and oil, fiber and miscellaneous crops exceeds the acreage of total cropland harvested and used for pasture due to double cropping.

Appendix table 3-4 .--Acreages of major crops, 1959 with preliminary projections to 1980, 2000 and 2020, Tennessee Water Resource Region

Land use ^{1/}	1959	Projections		
		1980	2000	2020
	1,000	1,000	1,000	1,000
	<u>Acres</u>	<u>Acres</u>	<u>Acres</u>	<u>Acres</u>
Feed crops-----	4,666	3,699	3,911	4,243
Grains-----	1,359	871	XXX	XXX
Roughage-----	3,307	2,828	XXX	XXX
Food crops-----	203	216	224	246
Grains-----	135	136	XXX	XXX
Vegetables, fruits, sugar---	53	69	XXX	XXX
Other food crops-----	15	11	XXX	XXX
Oil, fiber & misc. crops-----	549	662	630	664
Oil-----	44	238	XXX	XXX
Cotton-----	365	279	XXX	XXX
Tobacco & miscellaneous-----	140	145	XXX	XXX
Total cropland harvested and used for pasture ^{2/} -----	5,418	4,577	4,765	5,153

^{1/} Commodities included in each group are as follows: Feed grains--corn, grain sorghum, oats and barley; Roughages--hay, silage, forage and cropland pasture; Food grains--wheat, rye and rice; Vegetables fruits and sugar--Vegetables for fresh market and processing, citrus and noncitrus fruits, nuts sugar beets and sugar cane; Other food crops--potatoes, sweet potatoes, dry beans and dry peas; Oil crops--soybeans, peanuts and flaxseed.

^{2/} Total acreage of feed crops, food crops and oil, fiber and miscellaneous crops exceeds the acreage of total cropland harvested and used for pasture due to double cropping.

Appendix table 3-5 .--Acreages of major crops, 1959 with preliminary projections to 1980, 2000 and 2020, Great Lakes Water Resource Region

Land use ^{1/}	1959	Projections		
		1980	2000	2020
	1,000	1,000	1,000	1,000
	<u>Acres</u>	<u>Acres</u>	<u>Acres</u>	<u>Acres</u>
Feed crops-----	17,796	14,689	14,436	12,100
Grains-----	7,890	6,027	XXX	XXX
Roughage-----	9,906	8,662	XXX	XXX
Food crops-----	3,735	3,980	4,186	4,652
Grains-----	2,168	2,152	XXX	XXX
Vegetables, fruits, sugar---	885	982	XXX	XXX
Other food crops-----	682	846	XXX	XXX
Oil, fiber & misc. crops-----	2,024	4,475	4,202	4,303
Oil-----	1,684	4,135	XXX	XXX
Cotton-----	-	-	XXX	XXX
Tobacco & miscellaneous-----	340	340	XXX	XXX
Total cropland harvested and used for pasture ^{2/} -----	23,555	23,144	22,824	21,055

^{1/} Commodities included in each group are as follows: Feed grains--corn, grain sorghum, oats and barley; Roughages--hay, silage, forage and cropland pasture: Food grains--wheat, rye and rice; Vegetables fruits and sugar--Vegetables for fresh market and processing, citrus and noncitrus fruits, nuts sugar beets and sugar cane; Other food crops--potatoes, sweet potatoes, dry beans and dry peas; Oil crops--soybeans, peanuts and flaxseed.

^{2/} Total acreage of feed crops, food crops and oil, fiber and miscellaneous crops exceeds the acreage of total cropland harvested and used for pasture due to double cropping.

Appendix table 3-6 .--Acreages of major crops, 1959 with preliminary projections to 1980, 2000 and 2020, Lower Mississippi Water Resource Region

Land use ^{1/}	1959	Projections		
		1980	2000	2020
	1,000	1,000	1,000	1,000
	<u>Acres</u>	<u>Acres</u>	<u>Acres</u>	<u>Acres</u>
Feed crops-----	5,755	3,912	3,744	2,646
Grains-----	1,974	957	XXX	XXX
Roughage-----	3,781	2,955	XXX	XXX
Food crops-----	1,194	1,381	1,643	2,012
Grains-----	766	807	XXX	XXX
Vegetables, fruits, sugar---	358	519	XXX	XXX
Other food crops-----	70	55	XXX	XXX
Oil, fiber & misc. crops-----	6,198	8,806	8,360	8,717
Oil-----	3,234	6,798	XXX	XXX
Cotton-----	2,935	1,972	XXX	XXX
Tobacco & miscellaneous-----	29	36	XXX	XXX
Total cropland harvested and used for pasture ^{2/} -----	13,147	14,099	13,747	13,375

^{1/} Commodities included in each group are as follows: Feed grains--corn, grain sorghum, oats and barley; Roughages--hay, silage, forage and cropland pasture; Food grains--wheat, rye and rice; Vegetables, fruits and sugar--Vegetables for fresh market and processing, citrus and noncitrus fruits, nuts sugar beets and sugar cane; Other food crops--potatoes, sweet potatoes, dry beans and dry peas; Oil crops--soybeans, peanuts and flaxseed.

^{2/} Total acreage of feed crops, food crops and oil, fiber and miscellaneous crops exceeds the acreage of total cropland harvested and used for pasture due to double cropping.

Appendix table 3-7 .--Acreages of major crops, 1959 with preliminary projections to 1980, 2000 and 2020, Souris-Red Water Resource Region

Land use ^{1/}	1959	Projections		
		1980	2000	2020
	1,000	1,000	1,000	1,000
	<u>Acres</u>	<u>Acres</u>	<u>Acres</u>	<u>Acres</u>
Feed crops-----	9,055	5,913	5,663	5,298
Grains-----	5,820	3,943	XXX	XXX
Roughage-----	3,235	1,970	XXX	XXX
Food crops-----	4,149	5,924	6,389	7,327
Grains-----	3,977	5,529	XXX	XXX
Vegetables, fruits, sugar---	3	158	XXX	XXX
Other food crops-----	169	237	XXX	XXX
Oil, fiber & misc. crops-----	1,778	2,382	2,455	2,837
Oil-----	1,478	2,082	XXX	XXX
Cotton-----	-	-	XXX	XXX
Tobacco & miscellaneous-----	300	300	XXX	XXX
Total cropland harvested and used for pasture ^{2/} -----	14,982	14,219	14,507	15,462

^{1/} Commodities included in each group are as follows: Feed grains--corn, grain sorghum, oats and barley; Roughages--hay, silage, forage and cropland pasture; Food grains--wheat, rye and rice; Vegetables fruits and sugar--Vegetables for fresh market and processing, citrus and noncitrus fruits, nuts sugar beets and sugar cane; Other food crops--potatoes, sweet potatoes, dry beans and dry peas; Oil crops--soybeans, peanuts and flaxseed.

^{2/} Total acreage of feed crops, food crops and oil, fiber and miscellaneous crops exceeds the acreage of total cropland harvested and used for pasture due to double cropping.

Appendix table 3-8 .--Acreages of major crops, 1959 with preliminary projections to 1980, 2000 and 2020, Missouri Water Resource Region

Land use ^{1/}	1959	Projections			
		1980	2000	2020	
	1,000	1,000	1,000	1,000	
	<u>Acres</u>	<u>Acres</u>	<u>Acres</u>	<u>Acres</u>	
Feed crops-----	63,046	44,529	46,083	54,589	
Grains-----	31,875	25,238	XXX	XXX	
Roughage-----	31,171	19,291	XXX	XXX	
Food crops-----	19,832	23,604	24,597	27,497	
Grains-----	19,227	22,557	XXX	XXX	
Vegetables, fruits, sugar---	340	772	XXX	XXX	
Other food crops-----	265	275	XXX	XXX	
Oil, fiber & misc. crops-----	5,129	6,438	6,299	6,665	
Oil-----	3,432	4,742	XXX	XXX	
Cotton-----	-	-	XXX	XXX	
Tobacco & miscellaneous-----	1,697	1,696	XXX	XXX	
Total cropland harvested and used for pasture ^{2/} -----	88,007	74,571	76,979	88,751	

^{1/} Commodities included in each group are as follows: Feed grains--corn, grain sorghum, oats and barley; Roughages--hay, silage, forage and cropland pasture: Food grains--wheat, rye and rice; Vegetables fruits and sugar--Vegetables for fresh market and processing, citrus and noncitrus fruits, nuts sugar beets and sugar cane; Other food crops--potatoes, sweet potatoes, dry beans and dry peas; Oil crops--soybeans, peanuts and flaxseed.

^{2/} Total acreage of feed crops, food crops and oil, fiber and miscellaneous crops exceeds the acreage of total cropland harvested and used for pasture due to double cropping.

Appendix table 3-9 .--Acreages of major crops, 1959 with preliminary projections to 1980, 2000 and 2020, Arkansas-White-Red Water Resource Region

Land use ^{1/}	1959	Projections		
		1980	2000	2020
	1,000	1,000	1,000	1,000
	<u>Acres</u>	<u>Acres</u>	<u>Acres</u>	<u>Acres</u>
Feed crops-----	21,096	18,163	20,034	18,442
Grains-----	8,055	7,183	XXX	XXX
Roughage-----	13,041	10,980	XXX	XXX
Food crops-----	13,551	13,318	13,577	14,842
Grains-----	13,277	13,014	XXX	XXX
Vegetables, fruits, sugar---	210	261	XXX	XXX
Other food crops-----	64	43	XXX	XXX
Oil, fiber & misc. crops-----	4,169	4,253	4,197	4,324
Oil-----	1,755	2,585	XXX	XXX
Cotton-----	2,162	1,416	XXX	XXX
Tobacco & miscellaneous-----	252	252	XXX	XXX
Total cropland harvested and used for pasture ^{2/} -----	38,816	35,734	37,808	37,608

^{1/} Commodities included in each group are as follows: Feed grains--corn, grain sorghum, oats and barley: Roughages--hay, silage, forage and cropland pasture: Food grains--wheat, rye and rice: Vegetables, fruits and sugar--Vegetables for fresh market and processing, citrus and noncitrus fruits, nuts sugar beets and sugar cane; Other food crops--potatoes, sweet potatoes, dry beans and dry peas; Oil crops--soybeans, peanuts and flaxseed.

^{2/} Total acreage of feed crops, food crops and oil, fiber and miscellaneous crops exceeds the acreage of total cropland harvested and used for pasture due to double cropping.

Appendix table 3-10.--Acreages of major crops, 1959 with preliminary projections to 1980, 2000 and 2020, Upper Mississippi Water Resource Region

Land use ^{1/}	1959	Projections		
		1980	2000	2020
	1,000	1,000	1,000	1,000
	<u>Acres</u>	<u>Acres</u>	<u>Acres</u>	<u>Acres</u>
Feed crops-----	50,928	39,307	39,627	43,014
Grains-----	33,159	22,292	XXX	XXX
Roughage-----	17,769	17,015	XXX	XXX
Food crops-----	2,500	2,070	2,299	2,609
Grains-----	2,024	1,418	XXX	XXX
Vegetables, fruits, sugar---	432	607	XXX	XXX
Other food crops-----	44	45	XXX	XXX
Oil, fiber & misc. crops-----	8,121	12,999	12,653	13,083
Oil-----	7,930	12,810	XXX	XXX
Cotton-----	-	-	XXX	XXX
Tobacco & miscellaneous-----	191	189	XXX	XXX
Total cropland harvested and used for pasture ^{2/} -----	61,549	54,376	54,579	58,706

1/ Commodities included in each group are as follows: Feed grains--corn, grain sorghum, oats and barley; Roughages--hay, silage, forage and cropland pasture; Food grains--wheat, rye and rice; Vegetables fruits and sugar--Vegetables for fresh market and processing, citrus and noncitrus fruits, nuts sugar beets and sugar cane; Other food crops--potatoes, sweet potatoes, dry beans and dry peas; Oil crops--soybeans, peanuts and flaxseed.

2/ Total acreage of feed crops, food crops and oil, fiber and miscellaneous crops exceeds the acreage of total cropland harvested and used for pasture due to double cropping.

Appendix table 3-11.--Acreages of major crops, 1959 with preliminary projections to 1980, 2000 and 2020, Rio Grande Water Resource Region

Land use ^{1/}	1959	Projections		
		1980	2000	2020
	1,000	1,000	1,000	1,000
	<u>Acres</u>	<u>Acres</u>	<u>Acres</u>	<u>Acres</u>
Feed crops-----	1,225	875	955	1,166
Grains-----	249	172	XXX	XXX
Roughage-----	976	703	XXX	XXX
Food crops-----	325	202	184	192
Grains-----	28	-	XXX	XXX
Vegetables, fruits, sugar---	253	175	XXX	XXX
Other food crops-----	44	27	XXX	XXX
Oil, fiber & misc. crops-----	637	674	714	773
Oil-----	-	-	XXX	XXX
Cotton-----	627	664	XXX	XXX
Tobacco & miscellaneous-----	10	10	XXX	XXX
Total cropland harvested and used for pasture ^{2/} -----	2,161	1,725	1,827	2,105

^{1/} Commodities included in each group are as follows: Feed grains--corn, grain sorghum, oats and barley; Roughages--hay, silage, forage and cropland pasture; Food grains--wheat, rye and rice; Vegetables fruits and sugar--Vegetables for fresh market and processing, citrus and noncitrus fruits, nuts sugar beets and sugar cane; Other food crops--potatoes, sweet potatoes, dry beans and dry peas; Oil crops--soybeans, peanuts and flaxseed.

^{2/} Total acreage of feed crops, food crops and oil, fiber and miscellaneous crops exceeds the acreage of total cropland harvested and used for pasture due to double cropping.

Appendix table 3-12.--Acreages of major crops, 1959 with preliminary projections to 1980, 2000 and 2020, Texas-Gulf Water Resource Region

Land use ^{1/}	1959	Projections		
		1980	2000	2020
	1,000	1,000	1,000	1,000
	<u>Acres</u>	<u>Acres</u>	<u>Acres</u>	<u>Acres</u>
Feed crops-----	16,561	15,735	17,679	17,182
Grains-----	7,806	5,043	XXX	XXX
Roughage-----	8,755	10,692	XXX	XXX
Food crops-----	2,180	2,013	1,977	2,066
Grains-----	1,892	1,788	XXX	XXX
Vegetables, fruits, sugar---	261	211	XXX	XXX
Other food crops-----	27	14	XXX	XXX
Oil, fiber & misc. crops-----	5,379	4,383	4,495	4,880
Oil-----	320	369	XXX	XXX
Cotton-----	4,967	3,922	XXX	XXX
Tobacco & miscellaneous-----	92	92	XXX	XXX
Total cropland harvested and used for pasture ^{2/} -----	24,120	22,131	24,151	24,128

1/ Commodities included in each group are as follows: Feed grains--corn, grain sorghum, oats and barley; Roughages--hay, silage, forage and cropland pasture; Food grains--wheat, rye and rice; Vegetables fruits and sugar--Vegetables for fresh market and processing, citrus and noncitrus fruits, nuts sugar beets and sugar cane; Other food crops--potatoes, sweet potatoes, dry beans and dry peas; Oil crops--soybeans, peanuts and flaxseed.

2/ Total acreage of feed crops, food crops and oil, fiber and miscellaneous crops exceeds the acreage of total cropland harvested and used for pasture due to double cropping.

Appendix table 3-13.--Acreages of major crops, 1959 with preliminary projections to 1980, 2000 and 2020, Upper Colorado Water Resource Region

Land use ^{1/}	1959	Projections		
		1980	2000	2020
	1,000	1,000	1,000	1,000
	<u>Acres</u>	<u>Acres</u>	<u>Acres</u>	<u>Acres</u>
Feed crops-----	1,439	1,139	1,237	1,313
Grains-----	130	110	XXX	XXX
Roughage-----	1,309	1,029	XXX	XXX
Food crops-----	279	297	316	360
Grains-----	141	204	XXX	XXX
Vegetables, fruits, sugar---	28	53	XXX	XXX
Other food crops-----	110	40	XXX	XXX
Oil, fiber & misc. crops-----	11	10	10	10
Oil-----	-	-	XXX	XXX
Cotton-----	-	-	XXX	XXX
Tobacco & miscellaneous-----	11	10	XXX	XXX
Total cropland harvested and used for pasture ^{2/} -----	1,729	1,446	1,563	1,683

^{1/} Commodities included in each group are as follows: Feed grains--corn, grain sorghum, oats and barley; Roughages--hay, silage, forage and cropland pasture; Food grains--wheat, rye and rice; Vegetables, fruits and sugar--Vegetables for fresh market and processing, citrus and noncitrus fruits, nuts sugar beets and sugar cane; Other food crops--potatoes, sweet potatoes, dry beans and dry peas; Oil crops--soybeans, peanuts and flaxseed.

^{2/} Total acreage of feed crops, food crops and oil, fiber and miscellaneous crops exceeds the acreage of total cropland harvested and used for pasture due to double cropping.

Appendix table 3-14.--Acreages of major crops, 1959 with preliminary projections to 1980, 2000 and 2020, Lower Colorado Water Resource Region

Land use ^{1/}	1959	Projections		
		1980	2000	2020
	1,000	1,000	1,000	1,000
	<u>Acres</u>	<u>Acres</u>	<u>Acres</u>	<u>Acres</u>
Feed crops-----	800	899	919	1,016
Grains-----	267	208	XXX	XXX
Roughage-----	533	691	XXX	XXX
Food crops-----	197	212	202	212
Grains-----	78	64	XXX	XXX
Vegetables, fruits, sugar---	109	136	XXX	XXX
Other food crops-----	10	12	XXX	XXX
Oil, fiber & misc. crops-----	388	455	476	502
Oil-----	-	1	XXX	XXX
Cotton-----	370	436	XXX	XXX
Tobacco & miscellaneous-----	18	18	XXX	XXX
Total cropland harvested and used for pasture ^{2/} -----	1,343	1,524	1,555	1,688

^{1/} Commodities included in each group are as follows: Feed grains--corn, grain sorghum, oats and barley; Roughages--hay, silage, forage and cropland pasture; Food grains--wheat, rye and rice; Vegetables, fruits and sugar--Vegetables for fresh market and processing, citrus and noncitrus fruits, nuts sugar beets and sugar cane; Other food crops--potatoes, sweet potatoes, dry beans and dry peas; Oil crops--soybeans, peanuts and flaxseed.

^{2/} Total acreage of feed crops, food crops and oil, fiber and miscellaneous crops exceeds the acreage of total cropland harvested and used for pasture due to double cropping.

Appendix table 3-15.--Acreages of major crops, 1959 with preliminary projections to 1980, 2000 and 2020, Great Basin Water Resource Region

Land use ^{1/}	1959	Projections		
		1980	2000	2020
	1,000	1,000	1,000	1,000
	<u>Acres</u>	<u>Acres</u>	<u>Acres</u>	<u>Acres</u>
Feed crops-----	1,706	1,523	1,609	1,938
Grains-----	229	187	XXX	XXX
Roughage-----	1,477	1,336	XXX	XXX
Food crops-----	404	409	452	511
Grains-----	332	292	XXX	XXX
Vegetables, fruits, sugar---	64	109	XXX	XXX
Other food crops-----	8	8	XXX	XXX
Oil, fiber & misc. crops-----	28	28	28	28
Oil-----	-	-	XXX	XXX
Cotton-----	-	-	XXX	XXX
Tobacco & miscellaneous-----	28	28	XXX	XXX
Total cropland harvested and used for pasture ^{2/} -----	2,138	1,960	2,089	2,477

^{1/} Commodities included in each group are as follows: Feed grains--corn, grain sorghum, oats and barley; Roughages--hay, silage, forage and cropland pasture; Food grains--wheat, rye and rice; Vegetables fruits and sugar--Vegetables for fresh market and processing, citrus and noncitrus fruits, nuts sugar beets and sugar cane; Other food crops--potatoes, sweet potatoes, dry beans and dry peas; Oil crops--soybeans, peanuts and flaxseed.

^{2/} Total acreage of feed crops, food crops and oil, fiber and miscellaneous crops exceeds the acreage of total cropland harvested and used for pasture due to double cropping.

Appendix table 3-16.--Acreages of major crops, 1959 with preliminary projections to 1980, 2000 and 2020, California Water Resource Region

Land use ^{1/}	1959	Projections		
		1980	2000	2020
	1,000	1,000	1,000	1,000
	<u>Acres</u>	<u>Acres</u>	<u>Acres</u>	<u>Acres</u>
Feed crops-----	7,024	5,344	5,182	5,733
Grains-----	2,091	1,703	XXX	XXX
Roughage-----	4,933	3,641	XXX	XXX
Food crops-----	3,203	3,337	3,591	4,122
Grains-----	649	605	XXX	XXX
Vegetables, fruits, sugar---	2,298	2,398	XXX	XXX
Other food crops-----	256	334	XXX	XXX
Oil, fiber & misc. crops-----	1,079	1,119	1,092	1,166
Oil-----	-	4	XXX	XXX
Cotton-----	821	857	XXX	XXX
Tobacco & miscellaneous-----	258	258	XXX	XXX
Total cropland harvested and used for pasture ^{2/} -----	11,306	9,800	9,865	11,021

^{1/} Commodities included in each group are as follows: Feed grains--corn, grain sorghum, oats and barley; Roughages--hay, silage, forage and cropland pasture; Food grains--wheat, rye and rice; Vegetables fruits and sugar--Vegetables for fresh market and processing, citrus and noncitrus fruits, nuts sugar beets and sugar cane; Other food crops--potatoes, sweet potatoes, dry beans and dry peas; Oil crops--soybeans, peanuts and flaxseed.

^{2/} Total acreage of feed crops, food crops and oil, fiber and miscellaneous crops exceeds the acreage of total cropland harvested and used for pasture due to double cropping.

Appendix table 3-17.--Acreages of major crops, 1959 with preliminary projections to 1980, 2000 and 2020, Columbia-North-Pacific Water Resource Region

Land use ^{1/}	1959	Projections		
		1980	2000	2020
	1,000	1,000	1,000	1,000
	<u>Acres</u>	<u>Acres</u>	<u>Acres</u>	<u>Acres</u>
Feed crops-----	7,695	7,912	8,360	9,340
Grains-----	2,134	1,700	XXX	XXX
Roughage-----	5,561	6,212	XXX	XXX
Food crops-----	5,279	6,560	6,740	7,396
Grains-----	3,874	4,726	XXX	XXX
Vegetables, fruits, sugar---	639	1,049	XXX	XXX
Other food crops-----	766	785	XXX	XXX
Oil, fiber & misc. crops-----	778	778	778	778
Oil-----	-	-	XXX	XXX
Cotton-----	-	-	XXX	XXX
Tobacco & miscellaneous-----	778	778	XXX	XXX
Total cropland harvested and used for pasture ^{2/} -----	13,752	15,250	15,878	17,514

^{1/} Commodities included in each group are as follows: Feed grains--corn, grain sorghum, oats and barley; Roughages--hay, silage, forage and cropland pasture; Food grains--wheat, rye and rice; Vegetables fruits and sugar--Vegetables for fresh market and processing, citrus and noncitrus fruits, nuts sugar beets and sugar cane; Other food crops--potatoes, sweet potatoes, dry beans and dry peas; Oil crops--soybeans, peanuts and flaxseed.

^{2/} Total acreage of feed crops, food crops and oil, fiber and miscellaneous crops exceeds the acreage of total cropland harvested and used for pasture due to double cropping.

Appendix table 4-1 .--Land utilization, 1959 with preliminary projections to 1980, 2000 and 2020, North Atlantic Water Resource Region

Land Use	1959	Projections		
		1980	2000	2020
	1,000	1,000	1,000	1,000
	<u>Acres</u>	<u>Acres</u>	<u>Acres</u>	<u>Acres</u>
Agriculture:				
Cropland harvested and used				
for pasture ^{1/} -----	15,628	11,957	11,944	12,826
Cropland idle, fallow and				
crop failure-----	1,971	3,766	2,690	254
Total cropland-----	17,599	15,723	14,634	13,080
Pasture and range-----	7,980	8,776	8,170	7,306
Forest and woodland-----	66,740	63,920	59,495	53,183
Total agricultural ^{2/} -----	92,319	88,419	82,299	73,569
Other land-----	13,935	17,835	23,955	32,685
Land area-----	106,254	106,254	106,254	106,254

^{1/} An upward adjustment of about 1.6 percent in the acreage of cropland harvested reported by the Census of Agriculture was made to conform to estimates in "Major Uses of Land and Water in the United States", Agricultural Economic Report No. 13, U.S. Department of Agriculture.

^{2/} Includes 208,00 acres of irrigated land in 1959 (Census of Agriculture) and assumed acreages of irrigated land in projection years as follows: 1980--401,000; 2000--473,000; and 2020--517,000.

Appendix table 4-2.--Land utilization, 1959 with preliminary projections to 1980, 2000 and 2020, South Atlantic Water Resource Region

Land Use	1959	Projections		
		1980	2000	2020
	1,000	1,000	1,000	1,000
	<u>Acres</u>	<u>Acres</u>	<u>Acres</u>	<u>Acres</u>
Agriculture:				
Cropland harvested and used :				
for pasture <u>1/</u> -----	24,652	19,316	19,451	22,428
Cropland idle, fallow and :				
crop failure-----	4,935	8,564	7,612	3,774
Total cropland-----	29,587	27,880	27,063	26,202
Pasture and range-----	16,707	17,177	16,671	16,137
Forest and woodland-----	108,884	105,971	102,854	99,569
Total agricultural <u>2/</u> -----	155,178	151,028	146,588	141,908
Other land-----	12,018	16,168	20,608	25,288
Land area-----	167,196	167,196	167,196	167,196

1/ An upward adjustment of about 1.6 percent in the acreage of cropland harvested reported by the Census of Agriculture was made to conform to estimates in "Major Uses of Land and Water in the United States", Agricultural Economic Report No. 13, U.S. Department of Agriculture.

2/ Includes 560,000 acres of irrigated land in 1959 (Census of Agriculture) and assumed acreages of irrigated land in projection years as follows: 1980--1,536,000; 2000--1,728,000; and 2020--1,866,000.

Appendix table 4-3.--Land utilization, 1959 with preliminary projections to 1980, 2000 and 2020, Ohio Water Resource Region

Land Use	1959	Projections		
		1980	2000	2020
	1,000	1,000	1,000	1,000
	<u>Acres</u>	<u>Acres</u>	<u>Acres</u>	<u>Acres</u>
Agriculture:				
Cropland harvested and used :				
for pasture ^{1/} -----	35,344	30,323	29,167	30,754
Cropland idle, fallow and :				
crop failure-----	3,940	5,716	5,430	2,300
Total cropland-----	39,284	36,039	34,597	33,054
Pasture and range-----	12,483	14,011	13,449	12,847
Forest and woodland-----	40,227	38,894	37,338	35,673
Total agricultural ^{2/} -----	91,994	88,944	85,384	81,574
Other land-----	10,170	13,220	16,780	20,590
Land area-----	102,164	102,164	102,164	102,164

^{1/} An upward adjustment of about 1.6 percent in the acreage of cropland harvested reported by the Census of Agriculture was made to conform to estimates in "Major Uses of Land and Water in the United States", Agricultural Economic Report No. 13, U.S. Department of Agriculture.

^{2/} Includes 30,000 acres of irrigated land in 1959 (Census of Agriculture) and assumed acreages of irrigated land in projection years as follows: 1980--73,000; 2000--109,000; and 2020--142,000.

Appendix table 4-4.--Land utilization, 1959 with preliminary projections to 1980, 2000 and 2020, Tennessee Water Resource Region

Land Use	1959	Projections		
		1980	2000	2020
	1,000	1,000	1,000	1,000
	<u>Acres</u>	<u>Acres</u>	<u>Acres</u>	<u>Acres</u>
Agriculture:				
Cropland harvested and used				
for pasture ^{1/} -----	5,506	4,577	4,765	5,153
Cropland idle, fallow and				
crop failure-----	998	1,375	1,064	541
Total cropland-----	6,504	5,952	5,829	5,694
Pasture and range-----	2,723	3,113	3,049	2,979
Forest and woodland-----	16,370	16,082	15,749	15,384
Total agricultural ^{2/} -----	25,597	25,147	24,627	24,057
Other land-----	1,724	2,174	2,694	3,264
Land area-----	27,321	27,321	27,321	27,321

^{1/} An upward adjustment of about 1.6 percent in the acreage of cropland harvested reported by the Census of Agriculture was made to conform to estimates in "Major Uses of Land and Water in the United States", Agricultural Economic Report No. 13, U.S. Department of Agriculture.

^{2/} Includes 13,000 acres of irrigated land in 1959 (Census of Agriculture) and assumed acreages of irrigated land in projection years as follows: 1980--62,000; 2000--82,000; and 2020--94,000

Appendix table 4-5.--Land utilization, 1959 with preliminary projections to 1980, 2000 and 2020, Great Lakes Water Resource Region

Land Use	1959	Projections		
		1980	2000	2020
	1,000	1,000	1,000	1,000
	<u>Acres</u>	<u>Acres</u>	<u>Acres</u>	<u>Acres</u>
Agriculture:				
Cropland harvested and used :				
for pasture <u>1/</u> -----	23,939	23,144	22,824	21,055
Cropland idle, fallow and :				
crop failure-----	2,822	1,733	520	121
Total cropland-----	26,761	24,877	23,344	21,176
Pasture and range-----	4,769	5,280	4,952	7,983
Forest and woodland-----	39,583	37,856	35,517	28,714
Total agricultural <u>2/</u> -----	71,113	68,013	63,813	57,873
Other land-----	11,189	14,289	18,489	24,429
Land area-----	82,302	82,302	82,302	82,302

1/ An upward adjustment of about 1.6 percent in the acreage of cropland harvested reported by the Census of Agriculture was made to conform to estimates in "Major Uses of Land and Water in the United States", Agricultural Economic Report No. 13, U.S. Department of Agriculture.

2/ Includes 82,000 acres of irrigated land in 1959 (Census of Agriculture) and assumed acreages of irrigated land in projection years as follows: 1980--145,000; 2000--228,000; and 2020--275,000.

Appendix table 4-6.--Land utilization, 1959 with preliminary projections to 1980, 2000 and 2020, Upper Mississippi Water Resource Region

Land Use	1959	Projections		
		1980	2000	2020
	1,000	1,000	1,000	1,000
	<u>Acres</u>	<u>Acres</u>	<u>Acres</u>	<u>Acres</u>
Agriculture:				
Cropland harvested and used				
for pasture <u>1/</u> -----	62,553	54,376	54,579	58,706
Cropland idle, fallow and				
crop failure-----	2,713	7,086	5,479	390
Total cropland-----	65,266	61,462	60,058	59,096
Pasture and range-----	12,358	14,562	14,229	13,967
Forest and woodland-----	24,322	23,822	23,279	22,103
Total agricultural <u>2/</u> -----	101,946	99,846	97,566	95,166
Other land-----	10,057	12,157	14,437	16,837
Land area-----	112,003	112,003	112,003	112,003

1/ An upward adjustment of about 1.6 percent in the acreage of cropland harvested reported by the Census of Agriculture was made to conform to estimates in "Major Uses of Land and Water in the United States", Agricultural Economic Report No. 13, U.S. Department of Agriculture.

2/ Includes 55,000 acres of irrigated land in 1959 (Census of Agriculture) and assumed acreages of irrigated land in projection years as follows: 1980--153,000; 2000--228,000; and 2020--290,000.

Appendix table 4-7 .--Land utilization, 1959 with preliminary projections to 1980, 2000 and 2020, Souris-Red Water Resource Region

Land Use	1959	Projections		
		1980	2000	2020
	1,000	1,000	1,000	1,000
	<u>Acres</u>	<u>Acres</u>	<u>Acres</u>	<u>Acres</u>
Agriculture:				
Cropland harvested and used				
for pasture ^{1/} -----	15,226	14,219	14,507	14,462
Cropland idle, fallow and				
crop failure-----	5,295	5,765	5,372	5,319
Total cropland-----	20,521	19,984	19,879	19,781
Pasture and range-----	4,075	4,532	4,508	4,486
Forest and woodland-----	6,065	6,045	6,014	5,984
Total agricultural ^{2/} -----	30,661	30,561	30,401	30,251
Other land-----	2,882	2,982	3,142	3,292
Land area-----	33,543	33,543	33,543	33,543

^{1/} An upward adjustment of about 1.6 percent in the acreage of cropland harvested reported by the Census of Agriculture was made to conform to estimates in "Major Uses of Land and Water in the United States", Agricultural Economic Report No. 13, U.S. Department of Agriculture.

^{2/} Includes 9,000 acres of irrigated land in 1959 (Census of Agriculture) and assumed acreages of irrigated land in projection years as follows: 1980--24,000; 2000--37,000; and 2020--46,000.

Appendix table 4-8 .--Land utilization, 1959 with preliminary projections to 1980, 2000 and 2020, Missouri Water Resource Region

Land Use	1959	Projections		
		1980	2000	2020
	1,000	1,000	1,000	1,000
	<u>Acres</u>	<u>Acres</u>	<u>Acres</u>	<u>Acres</u>
Agriculture:				
Cropland harvested and used				
for pasture ^{1/} -----	89,443	74,571	76,979	88,751
Cropland idle, fallow and				
crop failure-----	25,682	31,274	28,432	16,192
Total cropland-----	115,125	105,845	105,411	104,943
Pasture and range-----	166,843	175,223	174,505	173,731
Forest and woodland-----	31,363	31,263	31,135	30,997
Total agricultural ^{2/} -----	313,331	312,331	311,051	309,671
Other land-----	16,099	17,099	18,379	19,759
Land area-----	329,430	329,430	329,430	329,430

^{1/} An upward adjustment of about 1.6 percent in the acreage of cropland harvested reported by the Census of Agriculture was made to conform to estimates in "Major Uses of Land and Water in the United States", Agricultural Economic Report No. 13, U.S. Department of Agriculture.

^{2/} Includes 5,802,000 acres of irrigated land in 1959 (Census of Agriculture) and assumed acreages of irrigated land in projection years as follows: 1980--7,160,000; 2000--7,375,000; and 2020--7,423,000.

Appendix table 4-9.--Land utilization, 1959 with preliminary projections to 1980, 2000 and 2020, Arkansas-White-Red Water Resource Region

Land Use	1959	Projections		
		1980	2000	2020
	1,000	1,000	1,000	1,000
	<u>Acres</u>	<u>Acres</u>	<u>Acres</u>	<u>Acres</u>
Agriculture:				
Cropland harvested and used :				
for pasture <u>1/</u> -----	39,449	35,734	37,808	37,608
Cropland idle, fallow and :				
crop failure-----	11,504	10,618	8,220	8,069
Total cropland-----	50,953	46,352	46,028	45,677
Pasture and range-----	59,374	63,194	62,751	68,350
Forest and woodland-----	44,996	44,677	44,364	37,946
Total agricultural <u>2/</u> -----	155,323	154,223	153,143	151,973
Other land-----	15,109	16,209	17,289	18,459
Land area-----	170,432	170,432	170,432	170,432

1/ An upward adjustment of about 1.6 percent in the acreage of cropland harvested reported by the Census of Agriculture was made to conform to estimates in "Major Uses of Land and Water in the United States", Agricultural Economic Report No. 13, U.S. Department of Agriculture.

2/ Includes 2,806,000 acres of irrigated land in 1959 (Census of Agriculture) and assumed acreages of irrigated land in projection years as follows: 1980--4,451,000; 2000--4,761,000; and 2020--4,877,000.

Appendix table 4-10.--Land utilization, 1959 with preliminary projections to 1980, 2000 and 2020, Lower Mississippi Water Resource Region

Land Use	1959	Projections		
		1980	2000	2020
	1,000	1,000	1,000	1,000
	<u>Acres</u>	<u>Acres</u>	<u>Acres</u>	<u>Acres</u>
Agriculture:				
Cropland harvested and used				
for pasture ^{1/} -----	13,362	14,099	13,747	13,375
Cropland idle, fallow and				
crop failure-----	1,486	111	110	109
Total cropland-----	14,848	14,210	13,857	13,484
Pasture and range-----	3,538	4,165	4,573	6,473
Forest and woodland-----	17,695	17,056	16,121	13,664
Total agricultural ^{2/} -----	36,081	35,431	34,551	33,621
Other land-----	5,583	6,233	7,113	8,043
Land area-----	41,664	41,664	41,664	41,664

^{1/} An upward adjustment of about 1.6 percent in the acreage of cropland harvested reported by the Census of Agriculture was made to conform to estimates in "Major Uses of Land and Water in the United States", Agricultural Economic Report No. 13, U.S. Department of Agriculture.

^{2/} Includes 625,000 acres of irrigated land in 1959 (Census of Agriculture) and assumed acreages of irrigated land in projection years as follows: 1980--1,302,000; 2000--1,684,000; and 2020--1,925,000.

Appendix table 4-11.--Land utilization, 1959 with preliminary projections to 1980, 2000 and 2020, Rio Grande Water Resource Region

Land Use	1959	Projections		
		1980	2000	2020
	1,000	1,000	1,000	1,000
	<u>Acres</u>	<u>Acres</u>	<u>Acres</u>	<u>Acres</u>
Agriculture:				
Cropland harvested and used :				
for pasture <u>1/</u> -----	2,196	1,725	1,827	2,105
Cropland idle, fallow and :	609	722	601	304
crop failure-----				
Total cropland-----	2,805	2,447	2,428	2,409
Pasture and range-----	59,735	59,562	59,092	58,622
Forest and woodland-----	14,108	13,989	13,878	13,767
Total agricultural <u>2/</u> -----	76,648	75,998	75,398	74,798
Other land-----	10,885	11,535	12,135	12,735
Land area-----	87,533	87,533	87,533	87,533

1/ An upward adjustment of about 1.6 percent in the acreage of cropland harvested reported by the Census of Agriculture was made to conform to estimates in "Major Uses of Land and Water in the United States", Agricultural Economic Report No. 13, U.S. Department of Agriculture.

2/ Includes 1,638,000 acres of irrigated land in 1959 (Census of Agriculture) and assumed acreages of irrigated land in projection years as follows: 1980--1,783,000; 2000--1,801,000; and 2020--1,810,000.

Appendix table 4-12.--Land utilization, 1959 with preliminary projections to 1980, 2000 and 2020, Texas-Gulf Water Resource Region

Land Use	1959	Projections		
		1980	2000	2020
	1,000	1,000	1,000	1,000
	<u>Acres</u>	<u>Acres</u>	<u>Acres</u>	<u>Acres</u>
Agriculture:				
Cropland harvested and used :				
for pasture <u>1/</u> -----	24,514	22,131	24,151	24,128
Cropland idle, fallow and :				
crop failure-----	3,978	4,284	1,782	1,310
Total cropland-----	28,492	26,415	25,933	25,438
Pasture and range-----	55,593	56,399	55,372	59,647
Forest and woodland-----	25,119	24,740	24,289	18,499
Total agricultural <u>2/</u> -----	109,204	107,554	105,594	103,584
Other land-----	8,377	10,027	11,987	13,997
Land area-----	117,581	117,581	117,581	117,581

1/ An upward adjustment of about 1.6 percent in the acreage of cropland harvested reported by the Census of Agriculture was made to conform to estimates in "Major Uses of Land and Water in the United States", Agricultural Economic Report No. 13, U.S. Department of Agriculture.

2/ Includes 4,168,000 acres of irrigated land in 1959 (Census of Agriculture) and assumed acreages of irrigated land in projection years as follows: 1980--5,296,000; 2000--5,331,000; and 2020--5,326,000.

Appendix table 4-13.--Land utilization, 1959 with preliminary projections to 1980, 2000 and 2020, Upper Colorado Water Resource Region

Land Use	1959	Projections		
		1980	2000	2020
	1,000	1,000	1,000	1,000
	<u>Acres</u>	<u>Acres</u>	<u>Acres</u>	<u>Acres</u>
Agriculture:				
Cropland harvested and used for pasture ^{1/} -----	1,757	1,446	1,563	1,683
Cropland idle, fallow and crop failure-----	284	270	151	28
Total cropland-----	2,041	1,716	1,714	1,711
Pasture and range-----	32,173	32,407	32,361	32,309
Forest and woodland-----	22,337	22,278	22,246	22,211
Total agricultural ^{2/} -----	56,551	56,401	56,321	56,231
Other land-----	8,457	8,607	8,687	8,777
Land area-----	65,008	65,008	65,008	65,008

^{1/} An upward adjustment of about 1.6 percent in the acreage of cropland harvested reported by the Census of Agriculture was made to conform to estimates in "Major Uses of Land and Water in the United States", Agricultural Economic Report No. 13, U.S. Department of Agriculture.

^{2/} Includes 1,361,000 acres of irrigated land in 1959 (Census of Agriculture) and assumed acreages of irrigated land in projection years as follows: 1980--1,780,000; 2000--1,766,000; and 2020--1,788,000.

Appendix table 4-14.--Land utilization, 1959 with preliminary projections to 1980, 2000 and 2020, Lower Colorado Water Resource Region

Land Use	1959	Projections		
		1980	2000	2020
	1,000	1,000	1,000	1,000
	<u>Acres</u>	<u>Acres</u>	<u>Acres</u>	<u>Acres</u>
Agriculture:				
Cropland harvested and used				
for pasture <u>1/</u> -----	1,365	1,524	1,555	1,688
Cropland idle, fallow and				
crop failure-----	441	247	206	63
Total cropland-----	1,806	1,771	1,761	1,751
Pasture and range-----	57,783	57,548	57,233	56,918
Forest and woodland-----	28,602	28,472	28,317	28,162
Total agricultural <u>2/</u> -----	88,191	87,791	87,311	86,831
Other land-----	10,593	10,993	11,473	11,953
Land area-----	98,784	98,784	98,784	98,784

1/ An upward adjustment of about 1.6 percent in the acreage of cropland harvested reported by the Census of Agriculture was made to conform to estimates in "Major Uses of Land and Water in the United States", Agricultural Economic Report No. 13, U.S. Department of Agriculture.

2/ Includes 1,219,000 acres of irrigated land in 1959 (Census of Agriculture) and assumed acreages of irrigated land in projection years as follows: 1980--1,173,000; 2000--1,159,000; and 2020--1,145,000.

Appendix table 4-15.--Land utilization, 1959 with preliminary projections to 1980, 2000 and 2020, Great Basin Water Resource Region

Land Use	1959	Projections		
		1980	2000	2020
	1,000	1,000	1,000	1,000
	<u>Acres</u>	<u>Acres</u>	<u>Acres</u>	<u>Acres</u>
Agriculture:				
Cropland harvested and used for pasture ^{1/} -----	2,173	1,960	2,089	2,477
Cropland idle, fallow and crop failure-----	684	686	549	152
Total cropland-----	2,857	2,646	2,638	2,629
Pasture and range-----	56,996	56,985	56,815	56,624
Forest and woodland-----	20,927	20,849	20,787	20,717
Total agricultural ^{2/} -----	80,780	80,480	80,240	79,970
Other land-----	6,409	6,709	6,949	7,219
Land area-----	87,189	87,189	87,189	87,189

^{1/} An upward adjustment of about 1.6 percent in the acreage of cropland harvested reported by the Census of Agriculture was made to conform to estimates in "Major Uses of Land and Water in the United States", Agricultural Economic Report No. 13, U.S. Department of Agriculture.

^{2/} Includes 1,426,000 acres of irrigated land in 1959 (Census of Agriculture) and assumed acreages of irrigated land in projection years as follows: 1980--1,609,000; 2000--1,642,000; and 2020--1,652,000.

Appendix table 4-16.--Land utilization, 1959 with preliminary projections to 1980, 2000 and 2020, California Water Resource Region

Land Use	1959	Projections		
		1980	2000	2020
	1,000	1,000	1,000	1,000
	<u>Acres</u>	<u>Acres</u>	<u>Acres</u>	<u>Acres</u>
Agriculture:				
Cropland harvested and used for pasture ^{1/} -----	11,491	9,800	9,865	11,021
Cropland idle, fallow and crop failure-----	2,075	2,777	1,991	96
Total cropland-----	13,566	12,577	11,856	11,117
Pasture and range-----	22,900	22,087	20,815	19,511
Forest and woodland-----	45,418	43,170	40,683	38,136
Total agricultural ^{2/} -----	81,884	77,834	73,354	68,764
Other land-----	22,147	26,197	30,677	35,267
Land area-----	104,031	104,031	104,031	104,031

^{1/} An upward adjustment of about 1.6 percent in the acreage of cropland harvested reported by the Census of Agriculture was made to conform to estimates in "Major Uses of Land and Water in the United States", Agricultural Economic Report No. 13, U.S. Department of Agriculture.

^{2/} Includes 7,627,000 acres of irrigated land in 1959 (Census of Agriculture) and assumed acreages of irrigated land in projection years as follows: 1980--9,087,000; 2000--9,849,000; and 2020--10,264,000.

Appendix table 4-17.--Land utilization, 1959 with preliminary projections to 1980, 2000 and 2020, Columbia-North Pacific Water Resource Region

Land Use	1959	Projections		
		1980	2000	2020
	1,000	1,000	1,000	1,000
	<u>Acres</u>	<u>Acres</u>	<u>Acres</u>	<u>Acres</u>
Agriculture:				
Cropland harvested and used				
for pasture ^{1/} -----	13,976	15,250	15,878	17,514
Cropland idle, fallow and				
crop failure-----	5,492	3,489	2,709	2,624
Total cropland-----	19,468	18,739	18,587	20,138
Pasture and range-----	54,101	54,249	53,806	51,627
Forest and woodland-----	84,497	83,828	83,143	82,421
Total agricultural ^{2/} -----	158,066	156,816	155,536	154,186
Other land-----	11,255	12,505	13,785	15,135
Land area-----	169,321	169,321	169,321	169,321

^{1/} An upward adjustment of about 1.6 percent in the acreage of cropland harvested reported by the Census of Agriculture was made to conform to estimates in "Major Uses of Land and Water in the United States", Agricultural Economic Report No. 13, U.S. Department of Agriculture.

^{2/} Includes 5,014,000 acres of irrigated land in 1959 (Census of Agriculture) and assumed acreages of irrigated land in projection years as follows: 1980--5,982,000; 2000--6,248,000; and 2020--6,327,000.

Appendix table 5.--Production of saw logs, veneer logs, and miscellaneous industrial timber products, 1962 with preliminary projections to 1980, 2000, and 2020, Water Resource Regions 1/

Water Resource Region	1962	Projections		
		1980	2000	2020
	Million cu. ft.	Million cu. ft.	Million cu. ft.	Million cu. ft.
North Atlantic-----	390	500	600	680
South Atlantic-Gulf-----	1,105	1,300	2,200	2,600
Ohio <u>2/</u> -----	275	350	560	620
Great Lakes-----	160	220	260	280
Upper Mississippi-----	105	170	270	420
Souris-Red-----	5	10	20	30
Missouri-----	90	110	130	150
Arkansas-White-Red-----	365	450	620	800
Lower Mississippi-----	180	240	320	350
Rio Grande-----	20	60	90	90
Texas-Gulf-----	135	190	340	360
Upper Colorado-----	35	100	190	190
Lower Colorado-----	65	110	130	130
Great Basin-----	<u>3/</u>	<u>3/</u>	10	10
California-----	905	900	750	750
Columbia-North Pacific-----	2,680	3,400	3,300	3,270
	6,515	8,110	9,790	10,730

1/ The round timber products harvested from the forests and used as the wood raw material in the Lumber and Wood Products Industries (Major group 24, as defined in the Standard Industrial Classification Manual). Saw logs are used to manufacture lumber; veneer logs to manufacture veneer and plywood; and miscellaneous industrial timber products a host of items such as cooperage, utility poles, and charcoal. The end products of the lumber and wood products industries have been converted to the roundwood products harvested from the forests, i.e., saw logs, veneer logs, and miscellaneous industrial products, so that they could be aggregated and used as a measure of the timber input into the industry. The projected timber inputs are the base for the projections of employment and payrolls shown in preceeding tables.

2/ Excludes the Tennessee Valley.

3/ Less than 5 million cubic feet.

Appendix table 6.--Pulpwood production, 1962 with preliminary projections to 1980, 2000, and 2020, Water Resource Regions 1/

Water Resource Regions	1962	Projections		
		1980	2000	2020
		Million cords	Million cords	Million cords
North Atlantic-----	4.9	8.7	12.8	14.6
South Atlantic-Gulf-----	17.6	26.6	47.7	50.9
Ohio 2/-----	0.8	1.6	3.5	5.6
Great Lakes-----	2.3	3.6	5.3	6.0
Upper Mississippi-----	0.9	1.8	2.6	3.0
Souris-Red-----	0.3	0.4	0.6	0.7
Missouri-----	0.1	0.9	2.0	2.5
Arkansas-White-Red-----	3.2	7.3	12.9	14.2
Lower Mississippi-----	1.1	3.5	6.6	6.8
Rio Grande-----	--	0.3	0.5	0.8
Texas-Gulf-----	1.6	3.9	7.0	7.0
Upper Colorado-----	3/	0.4	1.0	1.5
Lower Colorado-----	0.1	0.2	0.4	0.7
Great Basin-----	--	0.2	0.4	0.6
California-----	0.6	2.5	4.0	4.3
Columbia-North Pacific-----	8.2	16.5	21.3	23.0
	41.7	78.4	128.6	142.2

1/ The wood raw material used in the Pulp, Paper, and Allied Products Industries (Major group 26, as defined in the Standard Industrial Classification Manual) for the manufacture of wood pulp. The volume shown include roundwood harvested directly from the forests and plant by-products, obtained from other wood manufacturing plants such as sawmills and veneer and plywood plants, and used in the manufacture of wood pulp. The end products of the pulp and paper industries have been converted to pulpwood--the timber input into the industry. The projected pulpwood timber inputs are the base for the projections of employment and payrolls shown in preceeding tables.

2/ Excludes the Tennessee Valley.

3/ Less than 100,000 cords.

LAND USE DEFINITIONS

Cropland: Includes cropland harvested (with addition of crops, gardens, and orchards not otherwise reported, and wild hay harvested); crop failure, summer fallow, cropland in soil-improvement and cover crops not harvested or pastured, or used for another crop; temporarily idle cropland; and cropland used only for pasture.

Pasture and Range: All grassland and other nonforested pasture (not cropland and not woodland), including pasture and range in farms and public land in farms.

Forest and woodland: Commercial and noncommercial.

Other land: Urban and town areas, farmsteads and farm roads and lanes, highway and railroad rights-of-way, airports, and the nonforested parts of national and State parks, wildlife refuges, national defense areas, flood control areas, and other special-use areas. Also includes miscellaneous areas such as marshes, open swamps, bare rock, deserts, sand dunes, and other land which now generally has low value for agricultural purposes but which has utility for wildlife and recreational use and potential value for minerals.

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